Essays on an Emerging Financial Market

A case study of Suriname

Essays over een opkomende financiële markt

Een case studie van Suriname

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Summary

Stock markets in emerging economies are often viewed as a source of financial development and ultimately economic growth. Well-operating or efficient stock markets may contribute to the development of a country's financial sector through increase in savings, efficient allocation of capital to the most profitable investments and improved use of the existing resources. Efficiency of stock markets is especially important for countries with developing economies as these countries aim to catch up with global economic growth. For countries with emerging economies to benefit from equity financing, it is important that their stock exchanges at least pass the lowest level of market efficiency, that is, weak-form efficiency. This implies that existing stock prices reflect all information about historical prices and trading volumes.

Emerging economies share common features in particular with respect to their financial sector where the banking system dominates in raising finance, while stock markets are relatively less important (indirect versus direct finance). However, by providing alternative means of financing investment, stock markets may curtail the effects of bank dominance. In Suriname the banking system has traditionally also been the major player in the financial sector. With this the stock exchange in Suriname can be seen as an alternative financial source.

Given the role that the stock exchange in Suriname can perform, this thesis investigates the Suriname Stock Exchange (SSE) as part of Suriname's financial market. We study the empirical properties including weak-form efficiency of the stock returns of ten companies listed at the SSE. We also considered stock price performance of these companies and the link between that performance and fundamentals. We managed to collect unique data through various possibilities of data collection.

An interesting facet of economic growth is that much of it occurs through the growth in the size of a country's existing companies. This increases an interest to understand more about the top executives of the companies listed at the SSE. They are responsible for the financial and strategic decisions and if we want to comprehend why companies perform the way they do, we must reflect on the

characteristics of their most influential actors. Their risk attitude is considered to be important in the value creation for shareholders and future investors.

Most if not all current research focuses on the risk attitudes of top executives in westernized companies. We investigate the risk attitudes of leading executives in an emerging economy and we relate their risk attitudes with company performance.

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To my mother Marlene Bodeutsch and
the memory of my late father Stanley Bodeutsch.

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Chapter 1

Introduction

1.1 General motivation

Stock markets in emerging economies are often viewed as a source of financial development and eventually a source of economic growth (Billmeier and Massa, 2009; Yartey, 2008). According to Yartey (2008), the market capitalization of emerging stock markets has doubled, increasing from USD 2 trillion in 1995 to about USD 5 trillion in 2005. For example at the end of 2005, China, with the largest economy among other emerging economies, has a stock market capitalization of USD 780 billion (Asia), Chile with USD 136 billion (South America) and Jamaica with USD 13 billion (Caribbean) (World Bank, 2015). For the sake of comparison, the United States as a mature economy has a total stock market capitalization of around USD 16 trillion (World Bank, 2015).

Well-operating stock markets may contribute to the development of a country's financial sector through increase in savings, efficient allocation of capital to the most profitable investments and improved use of the existing resources, and thus leading to economic growth (Caporale et al. 2004, Singh 1991). Therefore, Fama (1970, p. 383) stated:

"The ideal is a market in which prices provide accurate signals for resource allocation: that is, a market in which companies can make investment decisions, and investors can choose among the securities that represent ownership of companies' activities under the assumption that security prices at any time "fully reflect" all available information. A market in which prices "fully reflect" available information is called efficient."

Hence, companies seeking to raise capital at lower cost can benefit from stock markets where it is essential that stock markets receive reliable information from

companies. The efficiency of stock markets is especially important for countries with developing economies as these countries aim to catch up with global economic growth. In addition, stock markets in these countries can offer means to attract foreign capital to finance investment and growth (Buckberg, 1995). However, for countries with emerging economies to benefit from equity financing, it is important that their stock exchanges pass at least the lowest level of efficiency, that is, weak-form efficiency (Magnuson and Widdick, 2002). This implies that existing stock prices reflect all information about historical prices and trading volumes.

The essays in this dissertation focus on Suriname, a country in South America with an emerging economy. The World Bank classifies Suriname as an upper middle income country which are countries with GNI per capita between USD 4,126 to USD 12,735. According to definitions on emerging markets presented by authors such as Hoskisson et al. (2000) and Meyer (2004), Suriname can be recognized as an emerging economy or emerging market.

Emerging markets share common features in particular with respect to their financial sector where the banking system dominates in raising finance, while stock markets are relatively less important (indirect versus direct finance). The financial sector of Suriname comprises of the Central Bank of Suriname, commercial banks, the National Development Bank, investment and finance companies, insurance companies, pension funds, savings and credit unions, foreign exchange bureaus (cambios), money transfer houses and a stock exchange (Ramsaran, 2012). According to the Central Bank of Suriname, the banking sector holds about 77 percent of financial sector assets. Furthermore, financial intermediation, calculated as private sector credit as a percentage of GDP, increased from 15.5% in 1996 to 26.8% in 2008 (Ramsaran, 2012). This is still lower than the region. It can be concluded that financial resources are highly concentrated in the banking sector. However, by providing alternative means of financing investment, stock markets may curtail the effects of bank dominance (De la Torre and Schmukler, 2007). Thus, the stock exchange in Suriname as part of Suriname's financial market can be seen as an alternative financial source.

The Suriname Stock Exchange (SSE) was established in 1994. Very little is known about the actual behavior and performance of the SSE. This can be explained by the limited availability of information which is often the case for developing economies. Up till now the SSE has not been fully considered as a means to generate financial development and economic growth. It is of interest to know whether the SSE functions efficiently. Therefore, investigating Suriname's stock exchange is intriguing as we provide the first ever quantitative analysis of the stock returns of companies listed at the SSE.

The listed companies on the SSE may contribute in the process of economic development of Suriname. According to Rehman et al. (2014), an interesting facet of economic growth is that much of it occurs through the growth in the size of a country's existing companies. Therefore, we need to consider companies' top executives who are responsible for the financial and strategic decisions. Hambrick (2007) indicates that if we want to comprehend why companies perform the way they do, we must reflect on the characteristics of their most influential actors, and these are their top executives. Their risk taking tendency is considered to be important in the value creation for shareholders and future investors.

Most if not all current research focuses on the risk attitudes of top executives in westernized companies. In this dissertation the focus will be on the risk attitudes of leading executives in an emerging economy and we relate their risk attitudes with company performance.

1.2 Outline of this dissertation

This dissertation consists of four empirical studies on aspects of an emerging financial market. In Chapter 2 we introduce the stock exchange of Suriname. The empirical properties of stock returns are studied for ten companies listed at the SSE, which is a young and growing stock market. Individual stock returns are found to be predictable from their own past to some extent, but the equal-weighted index returns are not. Dynamic correlations with large Latin American stock markets appear to be zero. It is concluded that there is much more efficiency to be gained for the

Suriname Stock Exchange. A concise version of this chapter has been published in Emerging Markets Finance and Trade (2015).

Chapter 3 is based on the size and value effects in Suriname where we study the link between stock returns and size and book-to-market equity (value) effects for ten companies listed on the Suriname Stock Exchange. We use the approach of Fama and French (1992) and examine the relation between stock returns and size (ME), book-to-market equity ratio (BE/ME), and earnings-to-price ratio (E/P). We find that there is apparently no size effect, but there is a value effect. This chapter has been published in Applied Financial Economics (2014).

In Chapter 4 we examine the risk attitudes in company board rooms of companies listed on the Suriname Stock Exchange. The members of the board of the company like the Chief Executive Officer (CEO) and the Chief Financial Officer (CFO), and also members of supervisory boards have an impact on the total performance of a company. Therefore, we study the influence of various characteristics of these members on their risk attitude in the decision making process. With a personalized survey as proposed by De Groot et al. (2012), we collect data for thirteen members in the board room. This is a small sample size as the population is also small. Nonetheless, we are able to test various hypotheses that are put forward in the literature.

In Chapter 5, we extend our study by analyzing the relation between the risk attitudes in the board room and company performance of the ten companies listed on the Suriname Stock Exchange. Interesting for our study is that recent literature on risk attitudes focuses usually on western industrialized countries. The literature which mostly draws on western economies, guides our formulation of the hypotheses. We will consider risk attitudes for board members in a country with an emerging economy. We personally interviewed thirteen board members and we use various characteristics as proxies for their risk attitudes.

In chapter 6, this dissertation is concluded with the main findings, the limitations of this study and various policy recommendations.

Chapter 2

The Stock Exchange of Suriname: Returns, Volatility, Correlations

and Weak-form Efficiency

Abstract

The empirical properties of stock returns are studied for ten companies listed at the Suriname Stock Exchange (SSE), which is a young and growing stock market. Individual stock returns are found to be predictable from their own past to some extent, but the equal-weighted index returns are not. Dynamic correlations with large Latin American stock markets appear to be zero. It is concluded that there is much more efficiency to be gained for the SSE.

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2.1 Introduction

Stock markets can signal economic growth, and for many industrialized countries stock market returns provide some predictability for future economic performance; see Barro (1990), Fama (1981), and Fisher and Merton (1984), amongst others. It is important that stock markets operate efficiently as efficiency is essential for proper wealth distribution and asset allocation to the most productive investments. In assessing stock market efficiency, three levels of informational efficiency are recognized and for this study we will focus on weak-form efficiency (which is the lowest level of efficiency). Weak-form market efficiency is conventionally defined as that future stock returns are not predictable from their own past (see Malkiel 2001, Samuels, et al. 1981, and Robinson 2005 for similar approaches). Market participants cannot thus be granted the opportunity of earning excessive returns on a consistent basis by analyzing past prices.

For developing countries the positive impact of proper stock markets can be viewed as being even more important as such countries seek to catch up with worldwide economic growth. When their stock markets would be weak-form efficient, it would attract (foreign) investors which may boost economic prosperity. Stock prices would reasonably provide an indication for the optimal allocation of resources. Hence, for emerging economies it is even more relevant to have a weak-form efficient stock market. Seddighi and Naian (2004) and Magnusson and Wydick (2002) provide a recent empirical overview of the efficiency of China's and Africa's stock markets, while Watson (2009) analyzes the efficiency of stock markets in the CARICOM sub-region. Other exemplary studies which focus on the efficiency of stock markets in emerging economies are Butler and Malaikah (1992), Claessens, et al. (1995), and Urrutia (1995).

In this paper we address the weak-form efficiency of the stock market of Suriname, an emerging market, which has never been analyzed as such. A main reason for this omission might be that the returns data have to be manually collected and coded, a task that took us a few weeks. In evaluating weak-form efficiency, researchers have concentrated on statistical tests for predictable patterns in stock returns.

The Suriname Stock Exchange (SSE) has a few peculiar properties, and we discuss these in this paper. The SSE was established in 1994 and from that year onwards ten Surinamese companies began the trading of their shares. At the end of 2012, the shares of eleven companies are traded with the larger part belonging to the manufacturing sector, of which ten ever since 2003 for which we can obtain consecutive time series data.

We examine the empirical properties of these ten listed stocks on the Suriname Stock Exchange and we also produce what tentatively can be called a stock market index, which is simply the equally weighted sum of the ten individual returns. We use equal weights instead of market values-based weights as it turns out that not all annual reports of these companies for these years are available. We discuss the properties of the returns, of the volatility and we also consider potential correlations between the individual stock returns. Next, we test for weak-form efficiency and we correlate the SSE index with various other Latin-American stock markets.

The outline of the paper is as follows. In Section 2 we give a brief description of the Suriname Stock Exchange. In Section 3 we examine the properties of the returns data, and we also test for weak-form efficiency. In Section 4 we conclude with a discussion.

2.2 The Suriname Stock Exchange (SSE)

Suriname is a country in South America, with French Guyana and Guyana as neighboring countries to the west and east, and in the south it borders Brazil. The country is sized 163.000 square kilometers, which is about one-third of Spain. In contrast, Suriname has only about 500.000 inhabitants, which is about one-hundredth of Spain. Until 1975 Suriname used to be a colony of the Netherlands. In recent years, Suriname has benefited from high commodity prices. This is stimulated by strong activity in the oil, bauxite and gold sectors, as well as in public investment. GDP per capita has grown from US$ 2,610 in 2003 to US$ 8,864 in 2012. However, up till now the SSE has not been fully considered as an option to propel economic

growth. In Figure 2.1 we present the GDP per capita for Suriname for the period 2003-2012. Figure 2.2 presents the course of the exchange rates for Suriname with regard to the US dollar and the Euro for the period 2003-2012 and Figure 2.3 provides the import and export figures of Suriname.

The Stock Exchange

The Suriname Stock Exchange (SSE) is located in Paramaribo, the capital of Suriname. It was established in January 1994 and it started out as an initiative from a group of private sector companies. At present, the SSE still has no legal basis and it is self-regulating. A shortcoming is the absence of a Securities Exchange Act. In practice, primarily company shares are traded on the SSE. The exchange is open for trading two times per month on Thursday using a manual trading system. The outcome of a trading session is presented in an exchange report (bulletin). There is no central clearing and settlement system. The criteria for admission which are determined by the Board of SSE are stated in the Exchange regulations (SSE 2007d). These are the size of the securities packages which are available for free trade should be revealed, the disclosure of audited financial statements and the financial position of the issuer.

From 2003 to 2011, there is no considerable change in the number of companies listed on the SSE and low volumes of shares are traded. Nonetheless, the total market capitalization has grown from approximately 145 million SRD at the end of 2003 to 1.29 billion SRD by 2011. In Appendix A we provide information about the SSE listed companies. In Appendix B we provide information of the development of the SSE based on the indicators size and liquidity as reported by Craigwell and Alleyne (2004) as well as turnover (total shares traded) per company over the years 2011 and 2012. Supply and demand information of the ten stocks is not available so it is difficult to report in detail how liquidity of the ten stocks evolves over time.

Comparison of SSE with Caribbean stock exchanges

The three major stock exchanges in the Caribbean region are the Jamaica Stock Exchange (JSE), Trinidad and Tobago Stock Exchange (TTSE) and the Barbados Stock Exchange (BSE). According to Arjoon and Greenidge (2007) and Watson (2008), these exchanges have all been characterized as inefficient, underdeveloped and illiquid with only a few listed companies. The SSE has a number of characteristics which are rather similar to these stock exchanges.

First of all, and not unexpectedly, the SSE is rather small which can be derived from the relatively limited trading activity and from the small number of listed companies. Details are presented at http://www.surinamestockexchange.com/nl. A second feature of the SSE is that it is privately owned and is managed by a Board mainly consisting of corporate players of listed companies. Third, the availability of information of the SSE is good, in the sense that information on past prices is available starting from 2003. That is, the half-monthly reports are partially available through the website. However, for the proper functioning of the SSE, more reliable and easily accessible (financial) information should be provided. Furthermore, only a few brokers are active on the market, that is, only brokers who are admitted by the Board are allowed to participate on the exchange on behalf of their clients.

In sum, the way the prices are set suggests that there is some level of illiquidity in the market, and that there are no designated market traders. Further, trades occur only twice a month and there are low volumes of such trades. Therefore, it seems that the SSE is operationally inefficient. The consequences of the inefficiency for the empirical data are studied below.

2.3 Data

The data used to examine the weak-form efficiency of the SSE comprises of the closing stock prices of ten companies listed on the SSE for which consecutive time series data is obtained over the period January 2003 to December 2011. We manually collected the data for the stock returns from the half-monthly reports which

to a large extent were obtained from the exchange afterwards. In Appendix C we present an excerpt of the raw data that is available to us, where it is also visible that it can happen that prices move from, for example, 1.07 to 10.70 (more on this below). In Appendix D we present the actual days for which we have price information.

Table 2.1 summarizes the listed companies and presents an ID number for each of them which are relevant for the presentation of the results below. Figure 2.4 provides a brief overview of the stock prices of 3 companies listed at the SSE for the period 2010 (second half of 2010) and 2011.

Returns and volatility

The data for the stock returns from the published half-monthly reports contain 24 observations per year, approximately two per month. We analyze the data for 2003 to and including 2011, which gives 216 data points. We use the last observation of 2002 to create the first returns observations for 2003. This database includes full information on the ten listed companies of interest, so we can also look at correlations across the returns. Appendix E indicates how stock returns are calculated at the SSE.

Before we perform various computations, we first carefully look at the data in the sense that we take care of re-alignments of stock prices. For example, Assuria's stock price witnessed large changes in the level of the stock price on days 58, 82 and 93, see Figure 2.5. On these days the returns take huge values. For parts of our analysis we decide to replace these exceptional returns by zero, and as such create corrected series (using the acronym _C). Note that for some analyses below we also consider the raw returns data including these outliers. We carry out such corrections for the data for the Surinam Bank, Elgawa, Hakrinbank and Self Reliance. We actively sought for explanations for these large returns, but we could not retrieve any useful information on this matter.

Nominal Returns

Table 2.2 presents some summary statistics of the data, and it is clear that negative returns are rare, and that there are many returns with value zero. The zero returns

data are not missing data, although they can be associated with no trade. Some series have only a few re-alignments, and then the returns have been set equal to zero for some analyses. Otherwise, it can also be that zero returns are apparently the actual output of the meeting of the traders. In the first column we see that average returns (with all zeroes included) range from 0.21% to 1.30%. The third column shows that the number of cases with only positive returns ranges from 11 (VSH Foods) to 98 (The Surinam Bank). When we compute the average returns only for the cases when these returns are positive, we obtain mean returns ranging from 2.64% (Torarica) to 6.22% (Elgawa). As compared with international stock market returns, these values seem to be rather modest.

Figure 2.6 presents an approximate index for the SSE. We created this index by summing the ten returns, where we thus assumed equal weights. The number of zero returns in the index is 17, and these zeroes do not appear in sequences but are all isolated observations. The creation of a market-value weighted index involves the collection of the market values. Although we do have access to various annual reports, we did not manage to collect them all, also as some companies did not have these in various years. We therefore stick to the analysis of an equally weighted index. Figure 2.7 presents a 24-period moving average of this index, which shows some cyclical patterns, with peaks in 2005 and 2008 and a recent dip in 2010. The average value of the index is 0.080% and the median is 0.069%. This suggests that the stock market did not substantially increase nor decrease in the period of 2003 to 2011.

Real Returns

In the relevant appendix F we present the monthly inflation data. We use the inflation data to create real stock returns, where monthly inflation figures are used twice for the pairs of data that correspond with the relevant months. Figure 2.8 displays the inflation data, and we can see that monthly inflation can be quite large, sometimes close to 5%.

Table 2.3 gives a statistical summary of the real returns. On average, the real returns for six stocks are negative, with VSH Foods having the most negative average (-0.827%). The amount of zeroes in the real returns is zero. The best

performing stock is that of the Surinam Brewery with an average real return of 0.258%.

Correlations

Next, we consider the correlations between the returns of the ten stocks. As there are many returns that are equal to zero, we decide to resort to a simple counting method. In Table 2.4 we give the number of times that the returns of pairs of stocks are both positive. On the diagonal one finds the number of positive returns of each stock itself, and the off-diagonal cases give the similarity of stock returns.

To visualize the numbers in Table 2.4, we use basic correspondence analysis (Greenacre, 2007). The results are given in Figure 2.9. Stock returns R4 (Elgawa) and R7 (Self Reliance) have large distances to the main cloud of points concerning stock returns R1, R3, R5, R8 and R10. So, Assuria, the Surinam Bank, Hakrinbank, the Surinam Brewery and Varossieau show similar behavior, that is, their stock prices move up often jointly, at least if they move up.

Table 2.5 presents similar numbers, but now concerning the data when pairs of stock returns are zero at the same time. This happens quite frequently as can be seen from the large numbers. Figure 2.10 visualizes these correlations, and now we see that Assuria (1) and the Surinam Bank (3) behave very different from the other eight stocks.

In sum, despite some marked differences concerning a few stocks, the tables and graphs for correlations show that there are quite some similarities across stock returns. This also supports our approach of taking an equal weighted average as an approximate index.

Volatility

In Table 2.6 we report the estimates of the relevant parameters in a GARCH (1,1) model (see Franses, 1998, Chapter 7, and the many references therein) for the two index series (with and without outlier removal). Such a GARCH model can be viewed as rather unreliable for data with many zeroes, so we do not consider this model for the individual series.

The estimation results in Table 2.6 suggest that equal-weighted stock index returns for the Suriname Stock Exchange have quite similar properties as those listed at USA or European stock markets. The parameters are estimated to be equal to 0.16 (ARCH) and 0.81 (GARCH), respectively. Also for the index compiled from the raw data we get similar estimates.

Weak-form efficiency

Finally, we examine whether the SSE is weak-form efficient. First we consider the individual stocks, and lastly we look at the (approximate) index.

Table 2.7 presents the estimated p values of an F test on the joint significance of 5 lags in an autoregression of order 5. When the p value is small, for example, below 0.05, we find evidence that individual stock returns can be predicted from their own past. The bold face cases in Table 2.7 are concerned with such predictability, that is, the returns of CIC, Elgawa, Hakrinbank, VSH Foods and Varossieau are to some extent predictable. Such predictability disappears for CIC and Elgawa when we only consider the cases with positive returns.

Most importantly, when we consider our equal-weighted stock market index for the SSE, we see that this index is not predictable.

Relation with other Latin American stock markets

Latin American countries have achieved to amend their macroeconomic environment and institutions that engage with financial development. These changes were expected to develop stock markets in the region significantly (De la Torre an Schmukler, 2007). In addition, Latin American markets have great investment opportunities and thus generating regional hubs to attract foreign investors. This could create a regional effect in which investors invest in shares of countries that are close to each other. Therefore, dynamic correlations with other Latin American countries are considered. For the same years (2003-2011) we have collected daily data on the stock markets of Brazil, Chile, Mexico and Peru. We use only those days that correspond with the days presented in Appendix C. Table 2.8 present the leads (SSE leads other markets) and lags (SSE follows) correlations. For the lag selection is used the Akaike Information Criterion (AIC).

Basically, we observe that there are no significant cross correlations between the SSE and other stock markets. This is quite intriguing as the four Latin American stock markets do have positive cross correlations among each other (not reported). In sum, there is no relation between the stock market in Suriname and other important stock markets in the region.

2.4 Conclusion

In this paper we provided the first ever quantitative analysis of the stock returns of companies listed at the Suriname Stock Exchange. We documented that average returns over the years 2003 to and including 2011 are not high, and that inflation-corrected returns are often negative, on average across these years. We showed that stock returns patterns across the ten stocks have similar behavior in various dimensions, and that estimates of conditional volatility parameters for the index bear similarities with index returns in developed countries. One conclusion of our study is thus that the SSE index shows some signs of weak-form efficiency. However, the way the prices are set indicates some level of illiquidity in the market. Further, there are no designated market traders, and trades occur on average only twice a month with low volumes of such trades. But, even though the SSE is operationally inefficient, the time series properties of the index mimic those that are usually found in other stock markets. In sum, we conclude that there still is much more efficiency to be gained for the SSE.

This paper involved rather basic empirical analysis, but in our future work we plan to zoom into more detailed features of the SSE. One important issue is whether announcements made by the respective firms have an impact on returns and volatility. Also, we would like to examine if stock returns have predictive content for future economic growth.

Tables

Table 2.1: Listed companies

ID	Company	Sector, industry
R1	Assuria Ltd.	Insurance
R2	Consolidated Industries Corporation Ltd.	Manufacturing
R3	The Surinam Bank	Banking
R4	Elgawa Ltd.	Services and Trading
R5	Hakrinbank Ltd.	Banking
R6	VSH Foods	Manufacturing
R7	The Surinam Insurance Company	Insurance
R8	The Surinam Brewery	Manufacturing
R9	The Torarica Group of Hotels	Services
R10	Varossieau Coating Industries	Manufacturing

Table 2.2: Statistical summary of all returns in percentages (216 observations) and of the cases where the returns are positive

	All cases		Cases with positive returns		
	Mean	**Median**	**Sample size**	**Mean**	**Median**
Assuria	1.14	0.00	93	2.65	2.02
CIC	0.74	0.00	29	5.60	3.51
DSB	1.16	0.00	98	2.98	2.31
Elgawa	1.07	0.00	37	6.22	6.06
Hakrinbank	0.61	0.00	57	2.78	2.28
VSH Foods	0.21	0.00	11	4.14	3.92
Self Reliance	0.59	0.00	34	5.85	5.13
Surinam Brewery	1.30	0.00	76	3.69	2.00
Torarica	0.59	0.00	48	2.64	1.35
Varossieau	0.60	0.00	34	3.82	2.50

Table 2.3: Statistical summary of all real returns (216 observations), that is, returns after correction for inflation

	Mean	Median
Assuria	0.102	-0.395
CIC	-0.302	-0.450
DSB	0.125	-0.270
Elgawa	0.027	-0.410
Hakrinbank	-0.431	-0.410
VSH Foods	-0.827	-0.580
Self Reliance	-0.452	-0.550
Surinam Brewery	0.258	-0.390
Torarica	-0.452	-0.424
Varossieau	-0.437	-0.450

Table 2.4: Number of times (out of 216 cases) that the returns of stock *a* and of stock *b* are both positive. For example, in row 2 column 3 we see that there are 11 observations where CIC (R2) and the Surinam Bank (R3) have positive returns.

Assuria	93	9	51	22	24	4	7	36	26	17
CIC	9	29	11	0	7	3	8	11	6	4
DSB	51	11	98	16	28	7	12	36	25	17
Elgawa	22	0	16	37	13	0	2	17	3	9
Hakrinbank	24	7	28	13	57	9	12	25	16	12
VSH Foods	4	3	7	0	9	11	3	3	6	3
Self Reliance	7	8	12	2	12	3	33	10	6	3
Surinam Brewery	36	11	36	17	25	3	10	76	23	14
Torarica	26	6	25	3	16	6	6	23	48	8
Varossieau	17	4	17	9	12	3	3	14	8	34

Table 2.5: Number of times (out of 216 cases) that the returns of stock *a* and of stock *b* are both zero. For example, in row 2 column 3 we see that there are 98 observations where CIC (R2) and the Surinam Bank (R3) have zero returns.

Assuria	123	102	75	108	89	116	91	83	101	106
CIC	102	186	98	149	134	178	154	121	144	156
DSB	75	98	117	95	87	113	90	77	94	101
Elgawa	108	149	95	179	133	168	137	120	134	154
Hakrinbank	89	134	87	133	157	155	128	106	125	135
VSH Foods	116	178	113	168	155	205	166	132	163	174
Self Reliance	91	154	90	137	128	166	172	111	136	142
Surinam Brewery	83	121	77	120	106	132	111	140	115	120
Torarica	101	144	94	134	125	163	136	115	168	142
Varossieau	106	156	101	154	135	174	142	120	142	182

Table 2.6: Estimates of parameters in GARCH models for SSE index returns (with standard errors in parentheses). The AR order is given in brackets.

	ARCH parameter		**GARCH parameter**	
Index, after correction [0]	0.162	(0.043)	0.809	(0.039)
Index [0]	0.072	(0.010)	0.860	(0.018)

Table 2.7: Tests for efficiency (p values of the F test for the joint significance of five lags in an autoregression of order 5). We consider all data and only those cases where stock returns are positive.

	All cases	Cases with positive returns
Assuria	0.110	0.601
CIC	**0.000**	0.374
DSB	0.593	0.096
Elgawa	**0.000**	0.672
Hakrinbank	**0.000**	**0.000**
VSH Foods	**0.005**	**0.017**
Self Reliance	0.474	0.236
Surinam Brewery	0.806	0.780
Torarica	0.220	0.349
Varossieau	**0.000**	**0.002**
Index	0.160	0.152

Table 2.8: Correlations between SSE equally weighted returns and other Latin American stock returns (Sample size is 216, meaning that correlations < -0.136 and > 0.136 are significant at the 5% level, indicated with an *)

	Leads				
	0	**+1**	**+2**	**+3**	**+4**
Brazil	0.069	0.022	0.025	0.011	-0.045
Chile	-0.063	-0.039	0.036	0.081	-0.111
Mexico	0.094	0.061	-0.058	0.016	-0.062
Peru	-0.002	0.048	-0.015	0.020	-0.139*

	Lags				
	-1	**-2**	**-3**	**-4**	**-5**
Brazil	0.008	-0.015	-0.012	-0.067	-0.049
Chile	-0.024	0.032	-0.048	-0.168*	0.006
Mexico	-0.019	-0.019	-0.076	-0.025	-0.072
Peru	0.036	0.009	0.000	-0.070	0.049

Figures

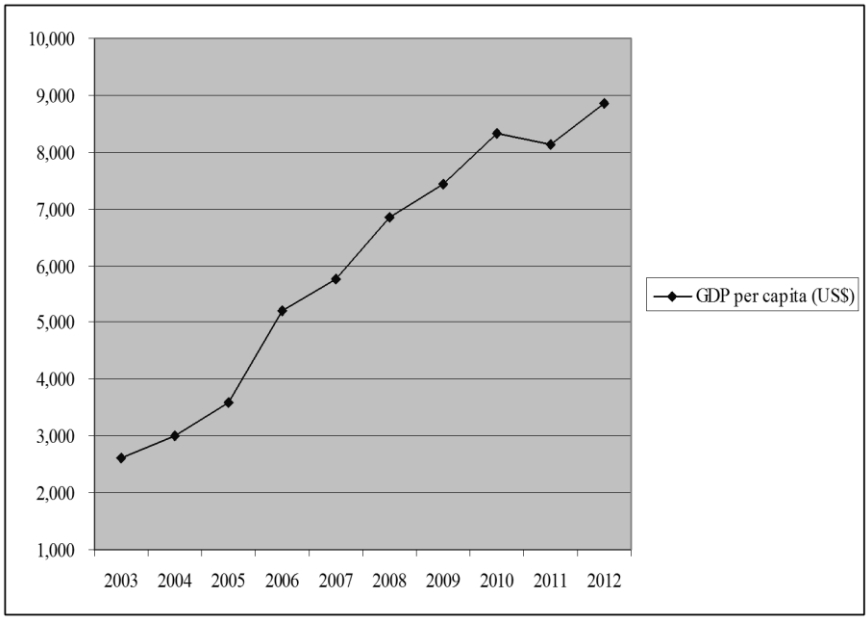


Figure 2.1: GDP per capita Suriname at current prices for the period 2003-2012.

Source: The World Bank (www. worldbank.org)

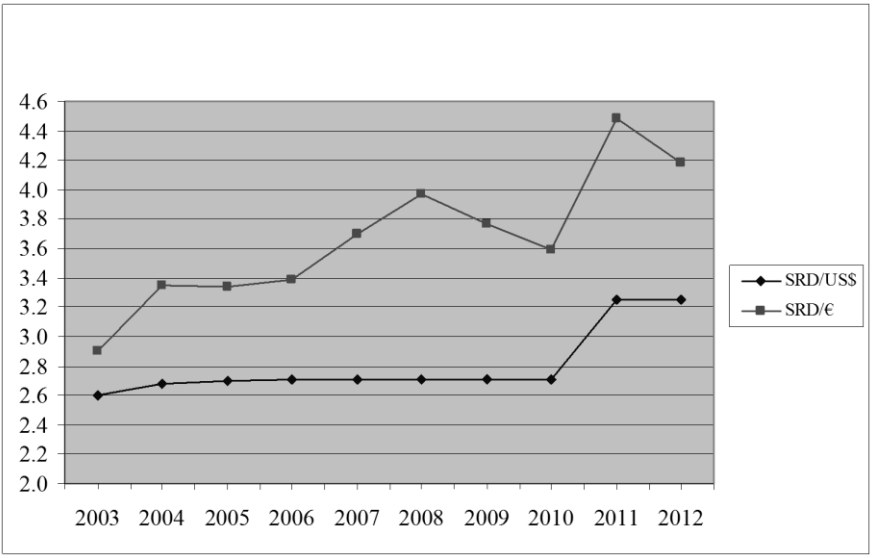


Figure 2.2: Average exchange rates Suriname for the period 2003-2012.

Source: Central Bank of Suriname (www.cbvs.sr)

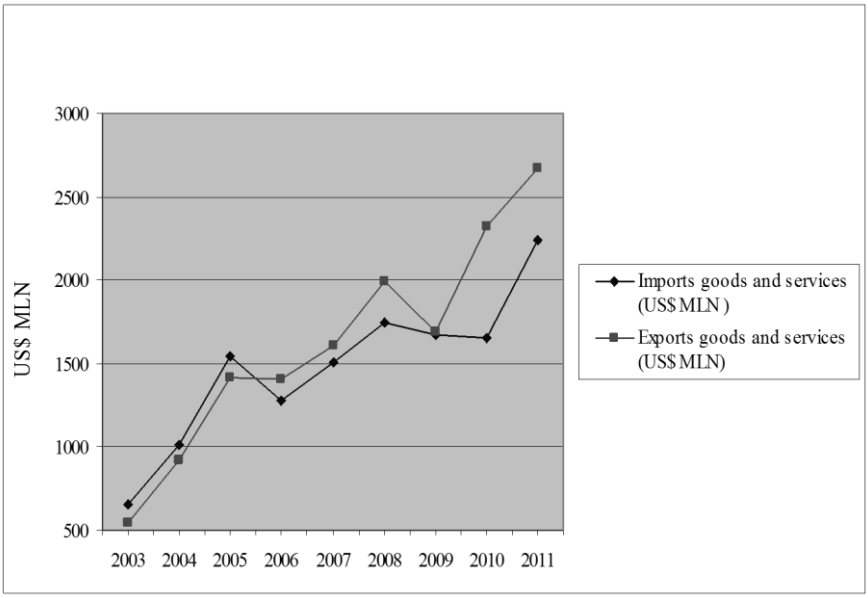


Figure 2.3: Imports and exports of goods and services of Suriname at current prices for the period 2003-2011.

Source: www.unctad.org

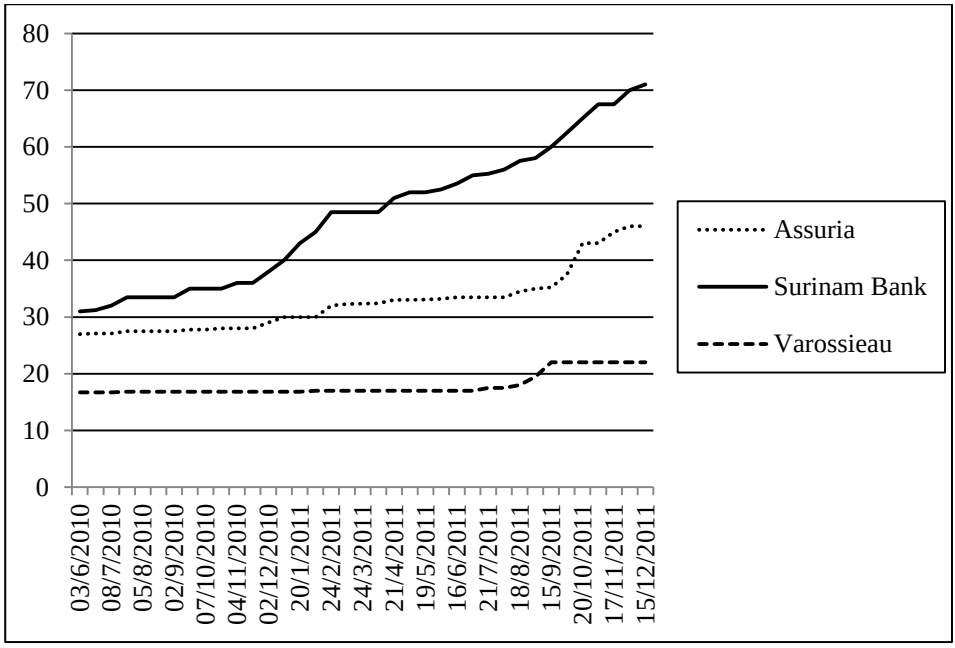


Figure 2.4: Overview of stock prices of 3 companies listed at the SSE for the period 2010 (second half of 2010) and 2011.

Source: Half monthly reports SSE.

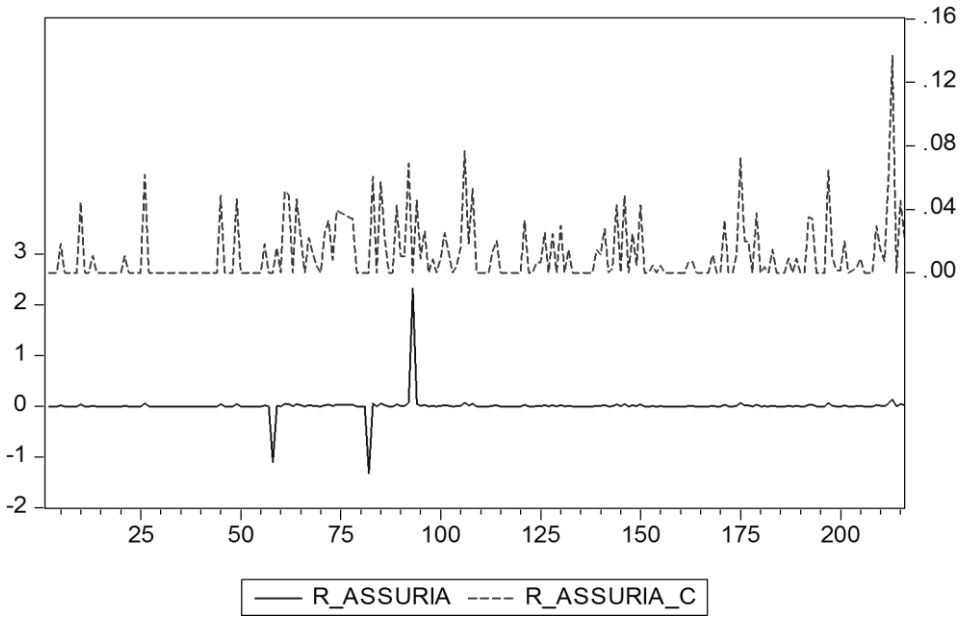


Figure 2.5: Returns and corrected returns for Assuria

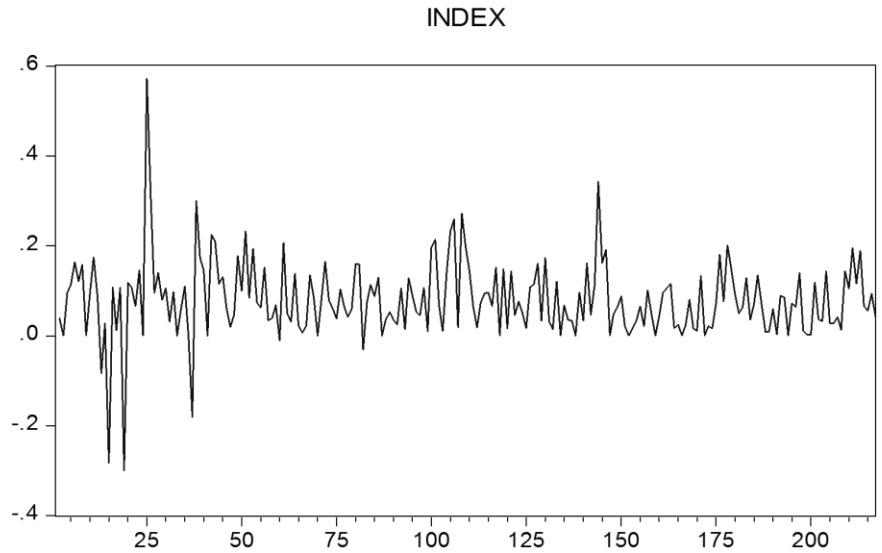


Figure 2.6: An index of returns on the Suriname stock exchange

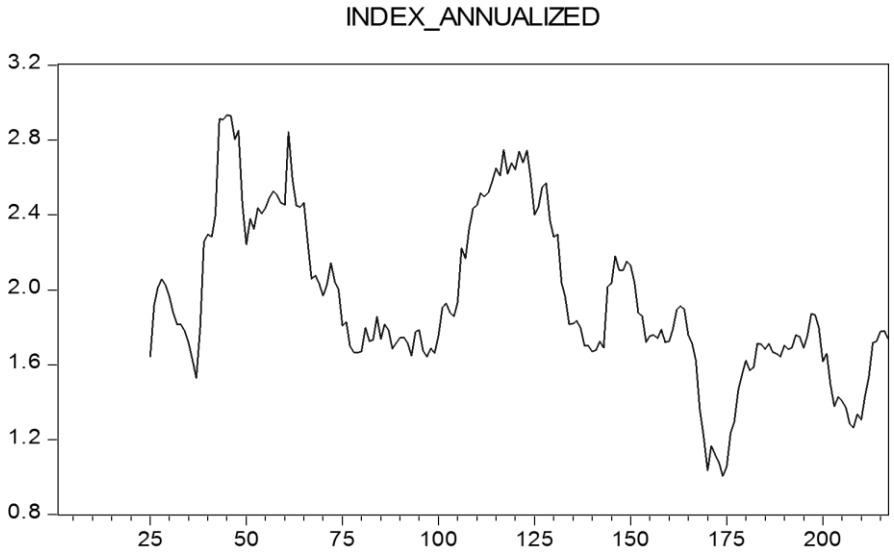


Figure 2.7: 24-period moving average

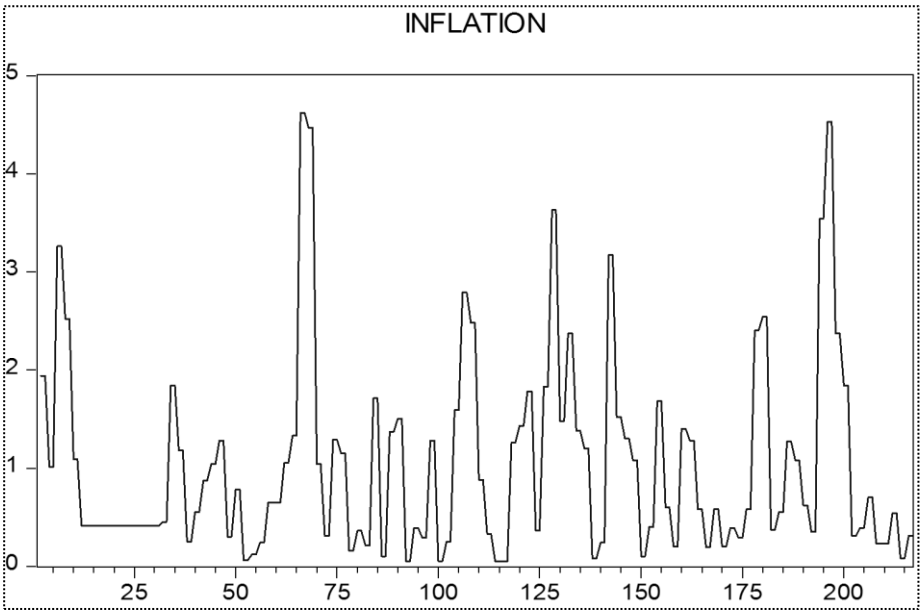


Figure 2.8: Two-weekly inflation (based on monthly inflation figures)

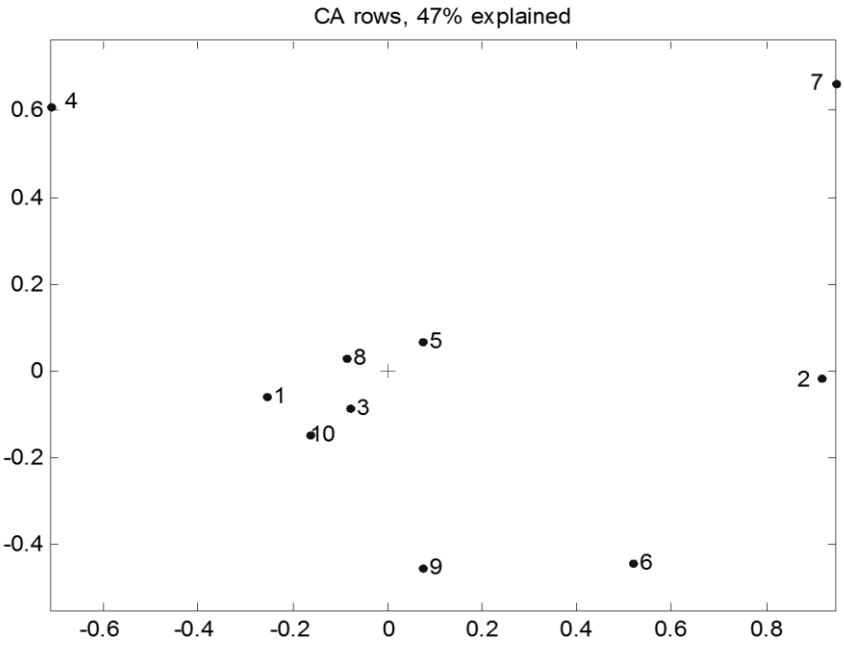


Figure 2.9: Outcomes of correspondence analysis, when the data input is as in Table 2.4. The closer the points are in this figure, the more correlated are their respective returns data. The numbers associate with the stocks as they are is given in Table 2.1.

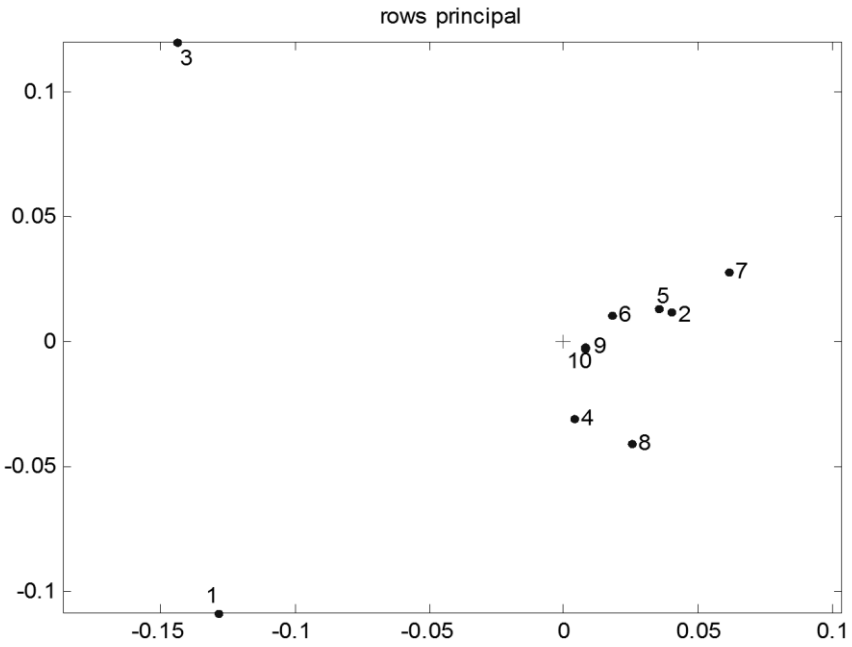


Figure 2.10: Outcomes of correspondence analysis, when the data input is as in Table 2.5. The closer the points are in this figure, the more correlated are their respective returns data. The numbers relate to the stocks as they are given in Table 2.1.

Appendixes of chapter 2

Appendix A: Information about the listed companies

At present, the number of listed companies at the SSE is 11. These companies are Assuria Ltd., Consolidated Industries Corporation Ltd., The Surinam Bank, Elgawa Ltd., Hakrinbank Ltd., VSH Foods Ltd., The Surinam Insurance Company Ltd., The Surinam Brewery Ltd., The Torarica Group of Hotels, Varossieau Coating Industries and VSH United. In addition, the State Oil Company of Suriname issued in 2010 bonds to partially finance its investment program.

Assuria Ltd. (Assuria) is an insurance company and her history dates back to 1889. Through its subsidiaries, Assuria offers life and general insurances. Assuria is also a large institutional investor and is especially active in the field of mortgage loans and real estate development. Furthermore, she invests in the international capital market. As of December 2011, there are 181 employees employed at Assuria.

Consolidated Industries Corporation Ltd. (CIC), established in 1967, is a manufacturing company. Its commercial activities comprise of the production and distribution of powder detergents for household and industrial use and the production of plastic packaging materials**.** Throughout the years CIC has succeeded in achieving and holding the position as market leader in Suriname in a number of product groups. As of December 2011, there are 123 employees employed at CIC.

The Surinam Bank (DSB), which has been established shortly after the abolishment of slavery (1863), is in the banking industry and it is the largest commercial bank in Suriname. They offer services to both the business and private markets. For the reporting period 2011, there were 371 employees at DSB.

Elgawa Ltd. (Elgawa) is a private company categorized in the services and trading sector. Elgawa is specialized in electric engineering and installation.

Hakrinbank Ltd. (Hakrinbank) started its activities in June 1936 and is a commercial bank in Suriname. They offer financial services to both the business and private markets. As of December 2011, 278 employees are employed at Hakrinbank.

VSH Foods Ltd., formerly known as Margarine, Fats and Oil Company Ltd. (Mavefa), has been established in 1960 and it is part of the VSH-United Group. VSH

Foods is a manufacturing company and its activities include the production and distribution of margarine, butter and other food components. Currently, the company counts 41 employees.

The Surinam Insurance Company Ltd. (Self Reliance), has been established in 1980, and it is an insurance company which offers various insurances packages. At the end of 2011, there were 130 individuals employed at Self Reliance.

The Surinam Brewery Ltd. has been established in 1955, and it is a manufacturing company. It brews, produces, sells and distributes alcoholic beverages. In addition, the brewery exports beer to various countries. At the end of 2011, there were 96 individuals employed at the Surinam Brewery.

The Torarica Group of Hotels (Torarica), which was established in 1962, is in the services sector. Torarica offers hotel rooms and other facilities and is also specialized in arranging meetings and events. During the reporting year 2011-2012, Torarica has 359 employees.

Varossieau Coating Industries (Varossieau), has been established in 1959, and it is a manufacturing company and produces and sells paint and paint accessories. For the reporting period 2011, there are 62 employees.

Finally, the eleventh company listed at the SSE is VSH-United, which has been established in 1958. It is a group of companies headquartered in Suriname and the Group activities include shipping, trading, manufacturing, real estate development and management. Other associated companies are involved in insurance, banking and in the hospitality industry. VSH-United started its trading activities on the SSE as of January 2006. For the reporting period 2011, the Group employed 327 persons.

For our analysis in this paper we aim to have the longest span of data possible. Except for VSH-United, we have data starting in 2003. Therefore, we analyze the stock returns of the first 10 companies.

Appendix B: Development of the Suriname Stock Exchange

Table B1: Measures of stock market development

Year	Number of listed companies	MCAP	**GDP current (SRD)	MCAP/GDP
2003	11	* 145.011.350	3.306.381.000	4%
2004	10	* 263.692.633	4.057.509.000	6%
2005	10	* 375.570.799	4.900.000.000	8%
2006	11	371.276.669	7.206.000.000	5%
2007	11	752.886.387	8.061.000.000	9%
2008	11	565.890.210	9.698.000.000	6%
2009	11	672.505.985	10.638.000.000	6%
2010	11	977.743.599	11.989.000.000	7%
2011	11	1.291.719.887	14.067.000.000	9%

Notes:
Measures of stock market development are: number of companies listed and the MCAP/GDP ratio (represent stock market size).
MCAP is defined as market capitalization and is calculated by the number of outstanding shares per stock multiplied by respective stock's closing price.
GDP is defined as Gross Domestic Product (GDP) at current local prices.
According to these 2 measures, the SSE has not grown remarkably.

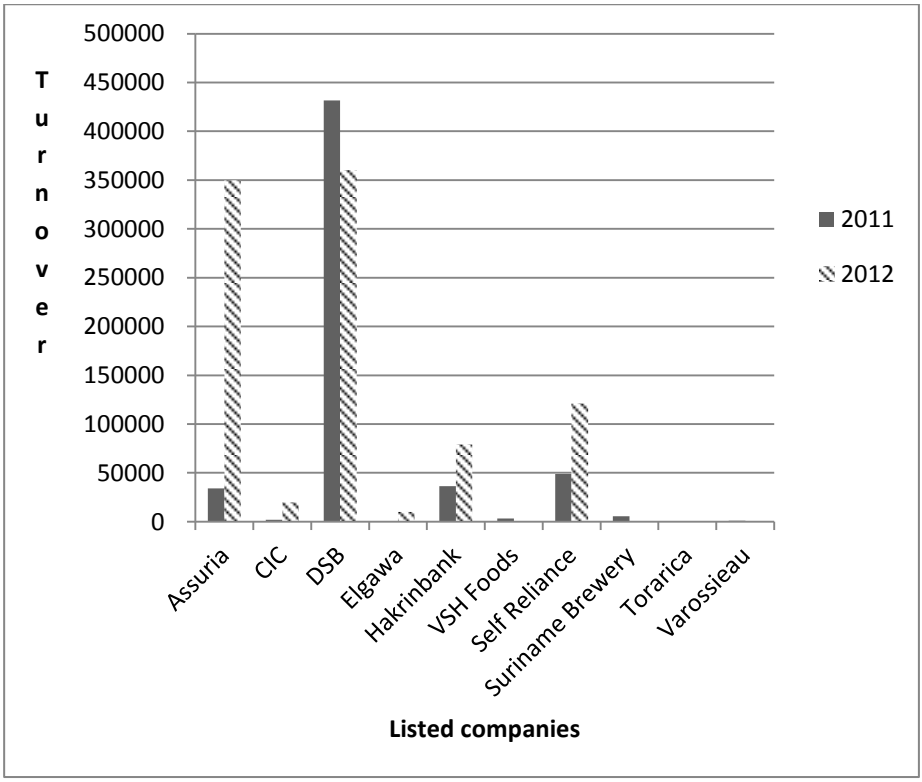
* Due to data unavailability, estimated amounts of MCAP are produced.

** GDP data derived from the World Bank and Central Bank of Suriname.

Table B2: Measures of liquidity

Year	Volume of shares traded	Total value of shares traded (SRD)	GDP current (SRD)	Turn-over/ GDP	Turn-over ratio
2003	* 52.004	*225.019	3.306.381.000	0%	0.2%
2004	* 27.169	*154.317	4.057.509.000	0%	0.1%
2005	161.773	831.309	4.900.000.000	0%	0.2%
2006	198.888	1.769.966	7.206.000.000	0%	0.5%
2007	143.330	1.845.384	8.061.000.000	0%	0.2%
2008	*11.172	* 175.853	9.698.000.000	0%	0.0%
2009	36.640	753.483	10.638.000.000	0%	0.1%
2010	7.920	208.116	11.989.000.000	0%	0.0%
2011	14.416	562.796	14.067.000.000	0%	0.0%

Notes:
Measures of liquidity are: turnover/GDP and turnover ratio (Craigwell and Alleyne, 2004).
Turnover is the market value of all traded shares during the year.
Turnover ratio is calculated as Turnover/MCAP.
The greater these two ratios the higher the liquidity but for the SSE this is not the case.
* Due to data unavailability, estimated amounts are produced.
(Source: half monthly reports SSE January 2003 – December 2011).



Turnover (total shares traded) per company.

Source: Annual reports 2011 and 2012 of the SSE.

Appendix C: Data in original format (an excerpt)

Date	Assuria	C.I.C.	DSB	Elgawa
05/1/2006	2.60	6.10	7.70	1.60
19/1/2006	2.70	6.10	7.70	1.60
02/2/2006	2.80	6.10	7.70	1.60
16/2/2006	2.90	6.10	7.72	1.60
02/3/2006	3.00	6.10	7.75	1.60
16/3/2006	3.00	6.10	8.15	1.60
23/3/2006	3.00	6.10	8.15	1.60
06/4/2006	3.00	6.10	8.15	1.60
20/4/2006	3.00	6.50	8.15	1.60
04/5/2006	0.80	6.30	8.15	1.60
18/5/2006	0.85	6.40	8.15	1.60
01/6/2006	0.85	6.50	8.15	1.60
15/6/2006	0.90	6.70	8.15	1.60
06/7/2006	0.92	6.70	8.25	1.60
20/7/2006	0.92	6.70	8.25	1.60
03/8/2006	0.92	6.70	8.25	1.60
17/8/2006	0.96	6.80	8.40	1.60
07/9/2006	0.97	6.80	8.50	1.60
21/9/2006	0.98	6.80	8.50	1.60
05/10/2006	1.05	6.80	8.70	1.60
19/10/2006	1.07	6.80	8.70	1.60
19/10/2006	10.70	6.80	8.70	1.60
2/11/2006	11.20	6.80	8.70	1.70
16/11/2006	11.30	6.80	8.90	1.80
07/12/2006	11.60	6.80	8.90	1.80
21/12/2006	11.60	6.80	9.00	1.80

Appendix D: The days with stock price information

	Years								
Month	**2003**	**2004**	**2005**	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**
January	9, 23	8, 22	6, 20	5, 19	4, 18	3, 17	8, 22	7, 21	6, 20
February	6, 20	5, 19	3, 17	2, 16	1, 15	7, 21	5, 19	4, 18	10, 24
March	6, 20	4, 18	3, 17	2, 16	1, 15	6, 20	5, 19	4, 18	10, 24
April	3, 17	1, 15	7, 21	6, 20	5, 19	3, 17	2, 16	1, 15	7, 21
May	8, 22	6, 20	5, 19	4, 18	3, 17	8, 22	7, 21	6, 20	5, 19
June	12, 26	3, 17	2, 16	1, 15	7, 21	12, 26	4, 18	3, 17	2, 16
July	3, 17	8, 22	7, 21	6, 20	5, 19	3, 17	2, 16	8, 22	7, 21
August	7, 21	5, 19	4, 18	3, 17	2, 16	7, 21	6, 20	5, 19	4, 18
September	4, 18	2, 23	1, 15	7, 21	6, 20	4, 18	3, 17	2, 16	1, 15
October	2, 16	7, 10	6, 20	5, 19	4, 18	2, 16	1, 15	7, 21	6, 20
November	6, 20	4, 18	10, 17	2, 16	1, 15	6, 20	5, 19	4, 18	3, 17
December	4, 18	2, 16	1, 15	7, 21	6, 20	4, 18	3, 17	2, 16	1, 15

Appendix E: Calculation of stock returns

According to the Exchange regulations including addendum (SSE, 2007), stock returns are calculated the following way:

1. Purchase orders, no trading

   All purchase orders are sorted based on the price. The order with the highest price follows first. Subsequently, the cumulative sales are determined per order from high to low until it exceeds the amount of SRD 6.000. The new price is the price of the order that leads to crossing the amount of SRD 6.000, provided that this price is higher than the previous closing price. If that is not the case, than the previous closing price remains valid.

   When no actual trading takes place and the total sales of unfilled buy and sell orders remains below the amount of SRD 6.000, the closing price on the previous trading day will be maintained (because of the small size).

2. Trading, no outstanding purchase orders

   The traded orders are sorted based on the price. The order with the highest price follows first. Subsequently, the cumulative sales are determined per order from high to low until it exceeds the amount of SRD 3.500. The new price is the price of the order that leads to crossing the amount of SRD 3.500, provided that this price is higher than the previous closing price. If that is not the case, than the previous closing price remains valid.

3. Trading, with outstanding purchase orders

   The traded orders are sorted based on the price. The order with the highest price follows first. Subsequently, the cumulative sales are determined per order from high to low until it exceeds the amount of SRD 3.500. The new price is the price of the order that leads to crossing the amount of SRD 3.500, provided that this price is higher than the previous closing price. If that is not the case, than the previous closing price remains valid.

If the total turnover value remains under the amount of SRD 3.500 (with actual trading of securities in any fund), the closing price on the previous trading day will be maintained because of the small size.

Appendix F: Data on inflation

	Year								
Month	**2003**	**2004**	**2005**	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**
January	1.94	0.41	0.78	1.29	1.28	1.78	1.30	0.20	3.54
February	1.01	0.41	0.06	1.15	0.05	0.36	1.08	0.39	4.53
March	3.26	0.41	0.12	0.16	0.25	1.83	0.10	0.29	2.37
April	2.52	0.45	0.24	0.36	1.59	3.63	0.40	0.58	1.84
May	1.09	1.84	0.65	0.21	2.79	1.48	1.68	2.40	0.31
June	0.41	1.18	0.65	1.71	2.48	2.37	0.60	2.54	0.39
July	0.41	0.25	1.05	0.10	0.88	1.38	0.20	0.37	0.70
August	0.41	0.55	1.33	1.37	0.33	1.20	1.40	0.55	0.23
September	0.41	0.87	4.62	1.50	0.05	0.08	1.28	1.27	0.23
October	0.41	1.04	4.47	0.05	0.05	0.24	0.58	1.08	0.54
November	0.41	1.28	1.04	0.39	1.26	3.17	0.19	0.62	0.08
December	0.41	0.30	0.31	0.29	1.43	1.52	0.58	0.35	0.31

Source: General Bureau of Statistics of Suriname. For the years 2003-2008, the inflation figures concern Paramaribo and Wanica. For the years 2009-2011, the figures concern Paramaribo, Wanica, Nickerie, Saramacca, Coronie and Commewijne. Due to fire, no data were available for July 2003 to March 2004, for which we have used the data of June 2003. In January 2009 the base year was changed. We replaced the original inflation rate (57.76) by a new value which is the average of December 2008 and February 2009.

Chapter 3

Size and value effects in Suriname

Abstract

This paper studies the link between stock returns and size and book-to-market equity effects for the ten companies listed at the Suriname Stock Exchange. We analyze the cross-sectional variation in average returns and we find that there is apparently no size effect, but there is a value effect. The findings are broadly in line with those for other emerging markets documented in the literature.

A first version of this chapter appeared as Bodeutsch, D., & Franses Ph.H.B.F. (2013), *Size and value effects in Suriname* (No. EI 2013-31). Econometric Institute Research Papers (pp. 1-17), Erasmus School of Economics.

3.1 Introduction

Emerging markets have grown rapidly and have received much attention in the past years. According to Barry et al. (1998) and Fama and French (1998), these markets are generally related to high returns and high volatility. Hence, there is a growing interest for factors determining stock returns on emerging markets.

Prior studies concerning the determinants of stock returns in developed markets (largely limited to the US) have produced results in which a number of firm-specific factors contribute in explaining the cross-section of average returns. Banz (1981) presents, in perhaps the first relevant empirical paper, evidence on the relation between (firm size) and US stock returns. Stattman (1980) and Chan et al. (1991) find a positive relation between the book-to-market equity ratio of a company and the average returns on US and Japanese stocks. Fama and French (1992) provide evidence that a combination of size (ME) and book-to-market equity (BE/ME) is better able to capture the cross section of stock returns than the market betas alone. In addition, Basu (1983) finds a positive relation between earnings-to-price ratio (E/P) and the average returns on US stocks.

These studies indicate that the average returns of small stocks are higher than those of large stocks (known as the size effect), and that stocks with high BE/ME and E/P ratios have on average higher returns than stocks with low ratios. This is called the value effect.

For emerging markets, a number of empirical studies have also demonstrated that size and value factors play a significant role in explaining the performance of stock returns; see, for example, Fama and French (1998); Claessens et al. (1998) and Barry et al. (2002).

In this paper, we investigate whether size and value effects play a major role in explaining the behavior of stock returns, where we focus on the Suriname Stock Exchange (SSE), a stock exchange that has never been analyzed as such. The SSE is a young and growing market in the Caribbean area, where Suriname is located north of Brazil and is bordered by Guyana and French Guyana to the west and east, respectively. The SSE represents an underdeveloped market as compared to developed markets and various other emerging markets, due to relatively limited

trading and a small number of listed companies. The market is also quite illiquid. For more details, see Bodeutsch and Franses (2012).

Our study builds on the research of Fama and French (1992), where we investigate the relation between stock returns and size (ME), book-to-market equity ratio (BE/ME), and earnings-to-price ratio (E/P). We extend the empirical evidence on emerging markets to Suriname using data of ten of the listed companies (for which we could collect the data) of the SSE for the period 2003 to and including 2012. These accounting variables, that is, market value of equity, book-to-market equity and earnings-price ratios, seem to be able to capture the cross-sectional variation in average returns, even though they have some peculiar properties (as we will discuss in the 'Data Analysis' section). The results are broadly in line with those for other emerging markets documented in the literature. As a courtesy to the reader, we present the data in the Appendix, as these data have never been compiled and published before.

The outline of our paper is as follows. In Section 2, we discuss some elements of the relevant literature on size and value effects of a number of developed and emerging stock markets. In Section 3, we describe the data collection and in Section 4 we turn to the data analysis. We conclude with a discussion and the main implications from our study.

3.2 Relevant literature

The seminal study by Fama and French (1992) presents evidence that the factors size (market capitalization, ME) and book-to-market equity ratio (BE/ME) have explanatory value for the cross-section of returns on US stocks. These factors are capable of explaining variation in returns beyond market risk. They examined the combined role of market beta (β), ME, E/P, leverage and BE/ME in the cross-section of average returns of US stocks in the period 1963 to and including 1990. The results indicate a negative relation between ME and average stock returns. With regard to BE/ME, E/P and the average returns, there is a positive relation, implying that high

BE/ME and high E/P stocks have higher average returns than stocks that are low on BE/ME and E/P.

Fama and French (1998) extend this type of research to other developed countries with major markets and also to developing countries with emerging stock markets, where they address the sample-specific nature of their results. Interestingly, the negative relationship between size and stock returns is also found in emerging markets, that is, stocks of small firms have higher average returns than stocks of large firms. Furthermore, the authors document international evidence which captures the value premium in stock returns generated by BE/ME, E/P, C/P and Div/P (the ratio of dividends over price). Fama and French (1998) report that the value premium is a compensation for risk associated with relative distress. Hence, firms with high BE/ME, E/P, C/P and Div/P, which are also known as value firms (firms in distress and poor earnings), have high average returns. At the same time, firms with low BE/ME, E/P, C/P and Div/P, which are labeled as growth firms (firms with high earnings), have lower average returns.

Claessens et al. (1998) study the relationship between stock market returns and size and value effects using cross-sectional stock returns from 19 emerging markets for the period 1986 to 1993. Some of the results presented in this study are in contrast with the results documented for developed markets. Remarkably, in 11 of the 19 studied markets, it is found that size is positively related to stock returns, meaning that stocks of larger firms create higher returns. They also documented evidence of BE/ME effects, but the direction is also often opposite to the results of Fama and French (1998). With regard to E/P, for six of the markets, it has a positive effect on stock returns, and this is on par with the results of Fama and French (1992), while for the remaining 13 markets, no significant relation is found between E/P and stock returns.

Barry et al. (2002) indicate in their research that the legitimacy of size and value effects based on BE/ME has been disputed by a number of authors. Some of the discussions are whether such effects hold generally or whether they are specific for the chosen sample or due to the different methodologies employed. Hence, these authors examine the robustness of the size and value effects using a sequence of different methodologies. This results in new evidence on the size and BE/ME effects

in 35 emerging markets for the period 1985 to 2000. Their evidence strongly supports the presence of a book-to market effect of the same kind as in other markets, but the evidence is considerably weaker for the size effect.

Recently, Borys and Zemčik (2011) focus on the occurrence of size and value effects on emerging stock markets in the Visegrad countries. Following Barry et al. (2002), they also raise some issues to define the behavior of stock market returns. The issues stated are whether the size and value effects are an international development and not confined to the United States and whether the relationship among stock returns and size and value factors has a global or country-specific character. Their results indicate that size and book-to-market equity do have an effect on stock returns, albeit that the effects are smaller than those obtained in Fama and French (1998).

3.3 Data collection

Our study uses data from ten of the listed companies of the SSE from 2003 to 2012, and these are the ten for which we could collect data. For two other companies, there were too many missing data. Whereas financial data of emerging stock markets is widely available, data on the SSE is not easily accessible. It took us half a year to collect the data, which was mainly due to the fact that we had to personally collect the annual reports, which are not always publicly available. The returns data are derived from the half-monthly reports of the SSE which are the result of a manual trading system; see Bodeutsch and Franses (2012). The data to construct the firm-specific factors are derived from the companies' annual reports. Due to the public unavailability, the annual reports (2003–2011) were collected in various different ways. We contacted the listed companies, we consulted the companies' websites (if available) and we collected data straight from the SSE. Also, it turned out to be possible to obtain certain annual reports from the Chamber of Commerce and Industry of Suriname.

We use market capitalizations to create the size factor. Size (ME) is calculated by the number of shares outstanding multiplied by a stock's closing price.

The firm-specific factors that we analyze to examine the value effect are the book-to-market equity ratio and the earnings-to-price ratio (the inverse of price-to-earnings ratio). Book-to-market equity (BE/ME) is the ratio of the book value of common equity to its market value and earnings-to-price (E/P) is the ratio of earnings per share to a stock's closing price.

In Figures 3.1–3.5, we provide an overview of the development of the stock prices, market value, book value, book-to-market equity ratio and earnings per share of the ten companies listed on the SSE for the period 2003 to 2012. As a courtesy to the reader, we provide the data we collected in the Data Appendix. An 'NA' denotes a missing value.

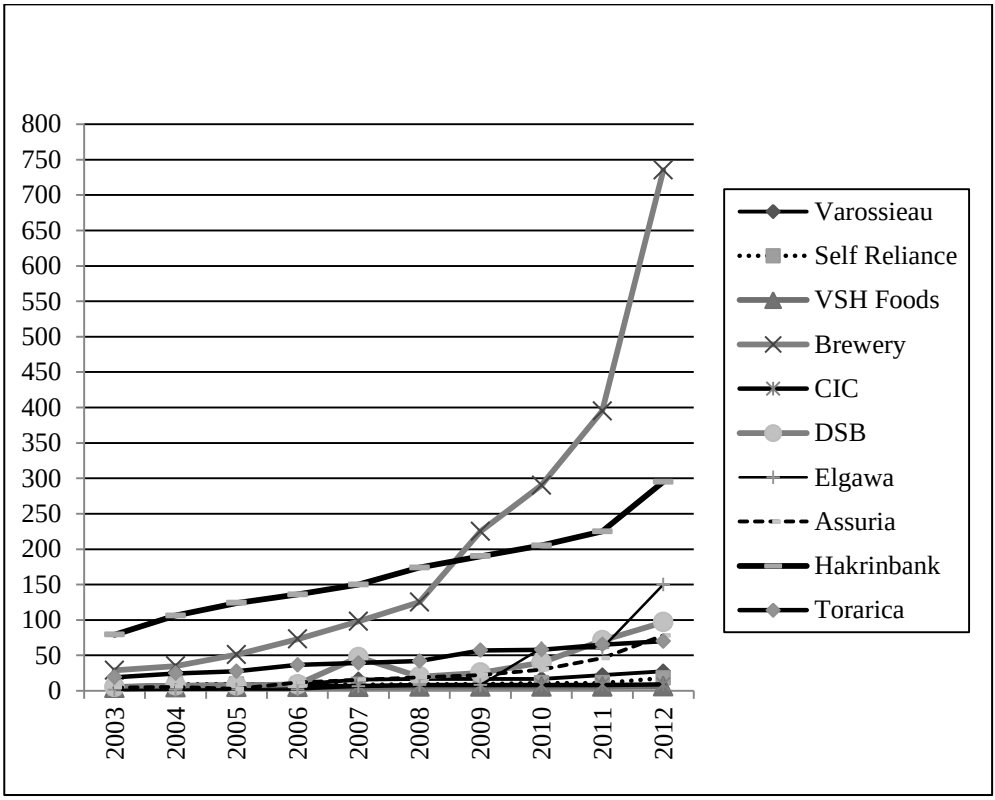


Figure 3.1: Closing stock prices of 10 companies listed on the SSE in local currency (SRD) for the end period 2003-2012.

Source: Half monthly reports SSE

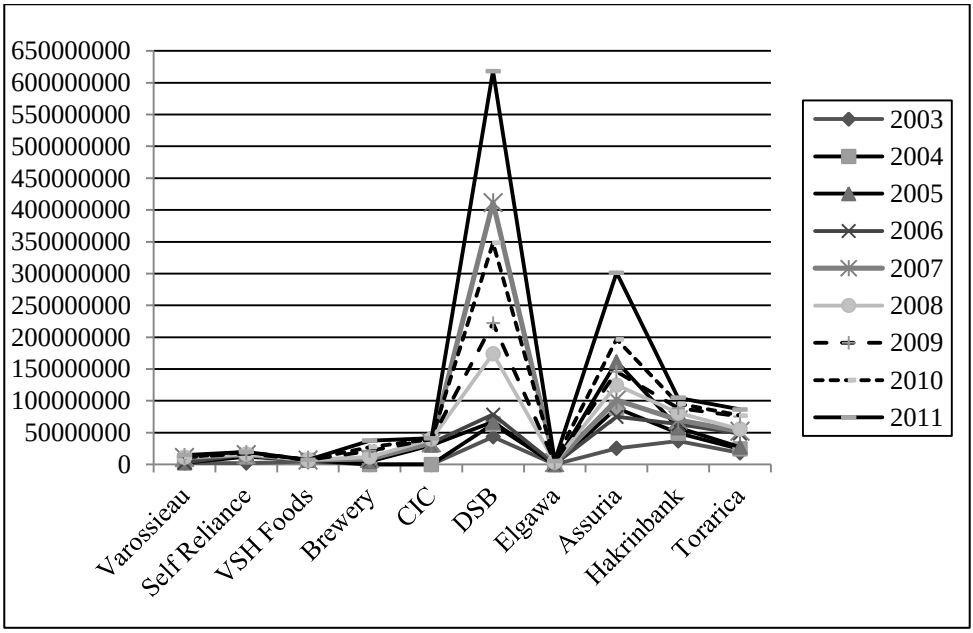


Figure 3.2: Market value (ME) of the stocks of 10 companies listed on the SSE in local currency (SRD) for the end period 2003-2011.

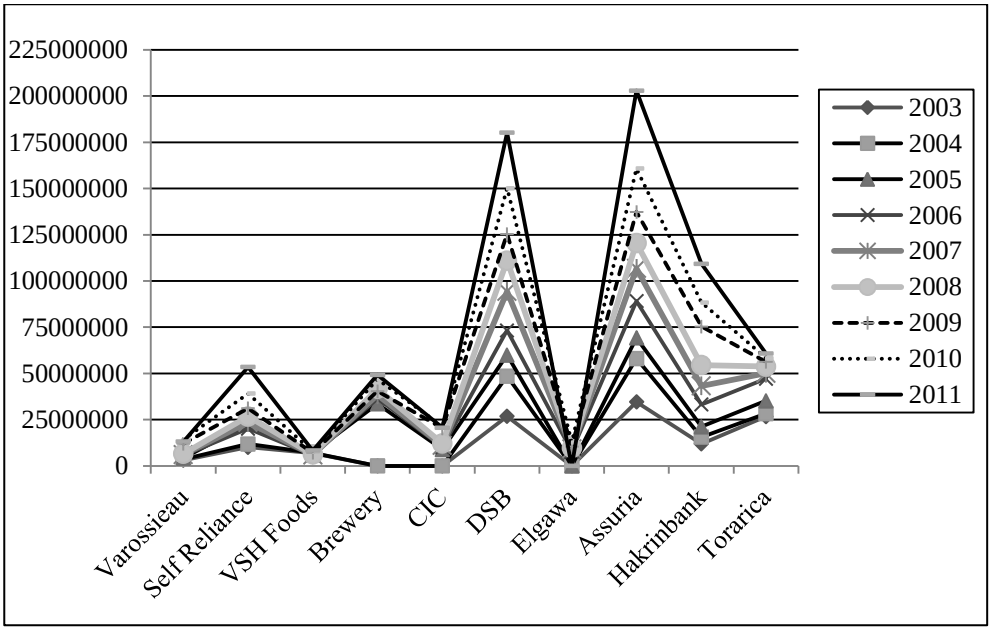


Figure 3.3: Book value of 10 companies listed on the SSE in local currency (SRD) for the end period 2003-2011.

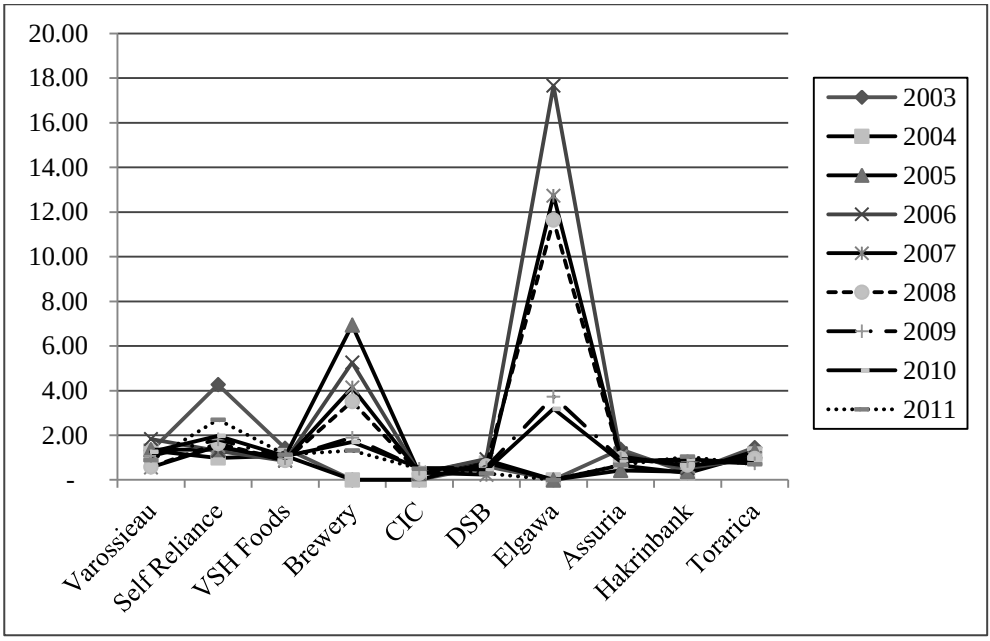


Figure 3.4: Book-to-market equity ratio (BE/ME) of 10 companies listed on the SSE for the end period 2003-2011.

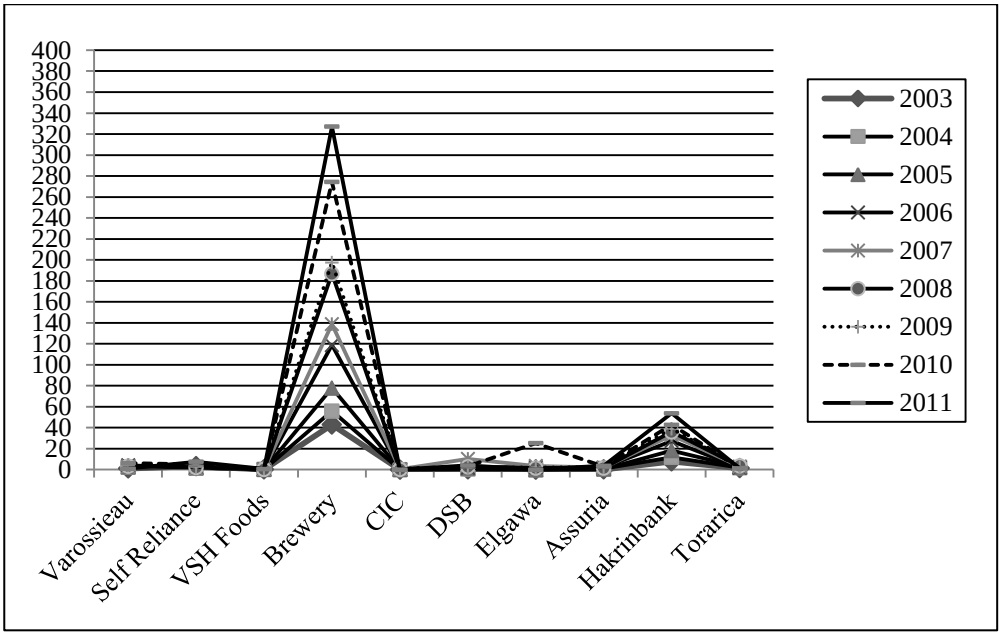


Figure 3.5: Earnings per share in local currency (SRD) for 10 companies listed on the SSE for the end period 2003-2011.

3.4 Data analysis

We have annual data on 10 stocks for the end period 2003 to and including 2012. For each year *T*, we run the familiar regression

$$logP_{i,T} - logP_{i,T-1} = \alpha_T + \beta_{1,T} logME_{i,T-1} + \beta_{2,T} log\frac{BE_{i,T-1}}{ME_{i,T-1}} + \beta_{3,T} logEPS_{i,T-1} + \varepsilon_{i,T} \quad (1)$$

where log denotes the natural logarithm and where i = 1,2,..,10, and P is the stock price, *ME* is market value (size), *BE* is book value and *EPS* is earnings per share. We have no data on dividend payments, so this variable is not included.

We have collected data for ten listed firms for the years 2003 to and including 2012. Due to the time lag, we lose 2003 as it is the first *T*-1 observation.

For the years 2003-2004 there are some missing data for the Surinamese Brewery and for CIC, and for the years 2003-2005, data are missing for Elgawa; see the Data Appendix. In Table 3.1, we will each time present the actual sample size used.

Table 3.1: Estimation results (White-corrected) standard errors in parentheses for each of the years 2003 to 2012.

	α	β_1	β_2	β_3	R^2
Year					
2012	-1.034	0.074	0.175	0.036	0.639
	(1.179)	(0.069)	(0.168)	(0.032)	
2011	-1.226	0.077	-0.102	0.037	0.544
	(1.269)	(0.075)	(0.233)	(0.044)	
2010	-1.533	0.118	1.029	-0.154	0.492
	(2.502)	(0.151)	(0.651)	(0.113)	
2009	-0.921	0.060	0.121	0.042	0.632
	(0.457)	(0.027)	(0.088)	(0.038)	
2008	1.101	-0.059	0.188	-0.035	0.524
	(1.358)	(0.082)	(0.154)	(0.059)	
2007	-2.696	0.185	0.531	-0.105	0.286
	(3.960)	(0.248)	(0.334)	(0.120)	
2006	-5.361	0.338	0.297	-0.066	0.445
(sample is 9)	(3.761)	(0.233)	(0.224)	(0.074)	
2005	2.767	-0.169	-0.152	0.039	0.312
(sample is 7)	(3.081)	(0.194)	(0.423)	(0.120)	
2004	-1.070	0.089	0.560	0.197	0.662
(sample is 7)	(3.183)	(0.199)	(0.339)	(0.112)	

Based on Fama and French (1992), we would expect β1 in (1) to be negative, β2 to be positive and β3 to be positive too. Table 3.1 presents the Ordinary Least Squares (OLS) based on estimation results for each of the years 2012–2004. We see diversity of parameter estimates, where sometimes estimates are positive, sometimes negative and, in many cases, insignificant. However, when we consider all equations as being part of a larger system, as in Table 3.2, we observe that the estimate of β2 has the expected sign, is significant, and has a value which is quite close to the value in Table III of Fama and French (1992).

Table 3.2: estimation results (White-corrected) standard errors in parentheses for two systems of equations (in boldface and italics are the 5% significant parameter estimates)

	α	β_1	β_2	β_3
System 1		0.063	***0.262***	-0.016
		(0.049)	(0.094)	(0.029)
System 2	-0.897	0.068	***0.298***	-0.025
	(0.792)	(0.047)	(0.094)	(0.028)

Notes to table 3.2: Systems 1 and 2 assume that the parameters in (1) are equal across equations. System 1 sets the intercept term equal to 0, while System 2 allows it to be equal across equations.

3.5 Conclusion

This paper has considered the ten foremost important companies in Suriname, their stock market performance and the link between that performance and fundamentals. Using the approach of Fama and French (1992), we have found that there is apparently no size effect, but there is a value effect. Book-to-market equity (BE/ME), which is the ratio of the book value of common equity to its market value

has the expected positive effect on stock returns. This ratio acts as a measure for past performance. Companies with a high BE/ME ratio (known as value firms) are related to poor performance in the past (low stock prices, poor earnings, and distress). So, also in Suriname, value firms have high stock returns which can be seen as an important factor for the Surinamese market and ultimately the investor. We could not find any significant size effects in Suriname, but this may also be due to the small sample. Anyway, the sign of the size effects is different than usually encountered (as it is positive), and this corroborates well with the findings in related studies on emerging markets.

The implications of our study are the following. Up until now, the SSE has not been fully considered as a source of capital. However, Suriname can benefit from the evidence of our study for the following reasons. Fama and French (1992) and others report that size and book-to-market equity are considered as variables which can provide information from stock prices about risk and expected returns. Value and growth are two fundamentals for stock selection and these reported variables can thus be useful. Value firms are perceived as underpriced firms (cheap stocks) and not appreciated by the market. If the Surinamese market realizes that the prospects of value firms are not as weak as proposed by the developments in the recent past, the stock price will increase and this in turn could result in investors gaining an interest in those firms. Value investors have been rewarded with a large risk premium.

In addition, value firms not listed on the SSE, seeking capital to finance their growth, can be motivated to be listed on the SSE. According to the indicators' size (measured by the number of companies listed and the MCAP/GDP ratio) and liquidity (measured by turnover/GDP and turnover ratio), the SSE has not grown remarkably in the past years (see Bodeutsch and Franses, 2012). As a result, these firms can ensure that the number of firms listed on the SSE increases. However, in order to stimulate the development of the SSE, which can propel economic growth, the Surinamese government should facilitate better stock market performance through, for example, improved disclosure requirements and settlement procedures.

Data Appendix chapter 3

Stock prices

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Varossieau	6.75	8	9	9	16	16.6	16.6	16.85	22	27.5
Self Reliance	1.82	9.2	9.3	8.6	8.6	9.1	9.5	11	11	18
VSH Foods	3.7	4.95	5.2	5.2	5.2	5.45	5.6	5.6	5.6	6.1
Surinam Brewery	28.82	35	51	73	98	125	225	290	395	735
CIC	2.25	3.25	6.1	6.8	6.8	8	8	8	8.25	9
DSB	5	7.3	7.68	9	47.25	20	25.5	40	71	96.75
Elgawa	1.2	1.2	1.6	1.8	6	8	8	60	60	150
Assuria	4.7	5.5	2.5	11.6	15.5	19.05	22.25	30	46	78
Hakrinbank	79.2	106	124	136	150	174	190	205	225	295
Torarica	19	24.5	27.5	36.6	39.22	42	57	58	65.3	70

Market value

2003	2004	2005	2006	2007	2008	2009	2010	2011
2341642	2775280	3122190	3122190	10830528	11236672	11236672	11405899	14891976
2373309	11996947	16746510	15487662	15487662	16388108	17108464	19809801	19809801
4823690	6453315	6779240	6779240	6779240	7105165	7300720	7306320	7306320
NA	NA	4837860	6924780	9296280	11857500	21343500	27509400	37469700
NA	NA	30512420	34014960	34014960	40017600	40017600	40017600	41268150
43600000	63656000	66969600	78480000	411547500	174200000	222105000	348400000	618410000
NA	NA	NA	862380	2874600	3832800	3832800	5585634	5584800
25304635	88835450	161518750	74957228	101410765	124843641	145820069	196611330	301474754
36883123	49363776	57746304	63334656	69854400	81031104	88482240	95467680	104781600
18430000	24354715	27336925	48510372	51982972	55667640	75548940	76874360	86549926

Note: the rows associate with the same companies as in the table for Stock Prices.

Book value

2003	2004	2005	2006	2007	2008	2009	2010	2011
3084924	3630388	4250824	5729473	6121734	6586155	12032489	14344903	13174685
10130094	11805245	22698604	20165479	23521840	26737283	31145748	39065202	53495906
6841781	7020062	7171736	5798243	6004422	6191081	7117852	7758999	8307928
NA	NA	33567203	36408324	38455695	41704028	40431586	46816832	49223455
NA	NA	8939000	10126000	11048000	12093000	20304000	21375000	20650017
26776000	48560000	59947000	73300000	94335000	111015000	125395000	150111000	180148000
NA	NA	NA	7887000	9256000	9691000	10449000	12669000	NA
34645000	58040000	69197425	89135891	106817961	120566494	137376595	160826106	202951935
11971828	15543068	21230689	33237684	43305390	54471081	75371359	88325937	109275975
26706000	28267000	35189978	47135227	50141539	53767118	56271051	58231951	60765027

Note: the rows associate with the same companies as in the table for Stock Prices.

Book-to-market equity ratio

2003	2004	2005	2006	2007	2008	2009	2010	2011
1.32	1.31	1.36	1.84	0.57	0.59	1.07	1.26	0.88
4.27	0.98	1.36	1.30	1.52	1.63	1.82	1.97	2.70
1.42	1.09	1.06	0.86	0.89	0.87	0.97	1.06	1.14
NA	NA	6.94	5.26	4.14	3.52	1.89	1.70	1.31
NA	NA	0.29	0.30	0.32	0.30	0.51	0.53	0.50
0.61	0.76	0.90	0.93	0.23	0.64	0.56	0.43	0.29
NA	NA	NA	17.66	12.74	11.64	3.73	3.19	NA
1.37	0.65	0.43	1.19	1.05	0.97	0.94	0.82	0.67
0.32	0.31	0.37	0.52	0.62	0.67	0.85	0.93	1.04
1.45	1.16	1.29	0.97	0.96	0.97	0.74	0.76	0.70

Note: the rows associate with the same companies as in the table for Stock Prices.

Earnings per share

2003	2004	2005	2006	2007	2008	2009	2010	2011
1.06	2.37	2.59	4.23	2.99	3.29	4.26	6.14	0.99
3.32	1.54	1.97	1.93	1.34	2.02	2.69	5.11	7.55
0.26	0.29	0.24	0.24	0.3	0.28	1.19	0.81	0.73
42.97	55.92	77.91	118.83	138.79	186.94	197.59	274.25	327.09
NA	NA	0.31	0.35	0.39	0.23	1.18	0.37	0.06
0.31	0.45	1.65	1.88	10.3	2.61	2.4	3.15	4.1
NA	NA	NA	2.48	3.54	1.66	2.08	25.26	NA
0.22	1.12	0.47	1.86	1.91	1.63	2.41	2.89	3.79
7.87	11.79	18.2	27.41	32.84	36.15	39.06	42.74	53.8
1.48	1.84	2.54	2.01	3.14	3.52	2.41	1.56	1.24

Note: the rows associate with the same companies as in the table for Stock Prices.

Chapter 4

Risk attitudes in company boardrooms in a country with an

emerging economy:

An empirical study for Suriname

Abstract

We test risk attitude and risk propensity of executive and non-executive directors of almost all (read: ten) companies listed at the Suriname Stock Exchange. This stock exchange associates with an emerging market, which currently seems to be at its initial stage. With a personalized survey we collect data for 13 members in the board room. The sample size is small as the population is small, but still we can test various hypotheses that are put forward in the literature. Our main finding is that the differences between risk attitudes of board members of companies in a country with a developing economy do not differ tremendously from those of board members in countries with developed economies.

A first version of this chapter appeared as Bodeutsch, D., & Franses Ph.H.B.F. (2015), *Risk attitudes in company boardrooms in a developing country: An empirical study for Suriname* (No. EI 2015-04). Econometric Institute Research Papers, Erasmus School of Economics.

4.1 Introduction

The decisions of the members of the board of a company have a strong effect on the performance of a company. Members like the Chief Executive Officer (CEO) and the Chief Financial Officer (CFO), and also members of supervisory boards exercise impact on the total performance of a company. This corresponds with the upper echelons perspective which argues that company performance is a reflection of its top managers (Hambrick and Mason, 1984). Various aspects of (supervisory) board membership are the focus of many recent studies, where bonuses, incentives and for example risk attitudes attract much attention. With regard to risk attitudes, key stakeholders now require from companies in all sectors to clearly express the degree of their willingness to take risk. In the present study we also consider risk attitudes, where we specifically focus on board members of companies in a developing and emerging economy. Indeed, most if not all research focuses on westernized companies, also as the relevant data are perhaps more easily available. In our present study we encounter data issues, as we can only interview 13 board members, simply as there are not that many more, but then still, we examine their risk attitudes and are able to highlight a few noticeable outcomes. As far as we know, this is the first ever study that measures risk attitudes of leading directors in a developing economy.

Board room behavior and dynamics in the inner process of the board room has been the subject of much recent research (see for example De Groot et al. 2012 and their list of references, Herrmann and Datta 2005, Jensen and Zajac 2004, amongst many others). In companies there are a multitude of factors such as characteristics of individuals, roles and organizational situations which all can influence decision making of top executives. In addition, essential for executives performance is the responsibility to undertake investments with which risk is associated. These elements of decision making, together with various industrial and environmental factors, result in a company's performance (Hambrick, 2007).

Many authors use demographic characteristics of top executives as proxies for their knowledge base, cognitive orientation and risk attitudes. These proxies are used to explain (or correlate with) the strategic choices of executives, performance levels or any stock exchange outcome (De Groot et al. 2012). A great deal of the

empirical literature on executive demographic characteristics, (strategic) decision-making and company performance has been grounded in the upper echelons theory advocated by Hambrick and Mason (1984). Hambrick and Mason (1984) indicate that demographic traits such as gender, age, educational level and functional background experiences shape the values and beliefs of top executives and can be seen as legitimate proxies for underlying cognitive abilities, knowledge and values and which, in turn, impact behavior and (strategic) decision-making. Whereas the upper echelons theory accentuates the role of demography-based preferences, the agency theory emphasizes the role of position-based preferences (Jensen and Zajac, 2004). Thus, according to the agency theory, the role in the board also has an impact on decision making of top executives. We investigate both demography and professional role in our study.

Adams et al. (2010) imply that much of the literature on board characteristics is directed towards Anglo-American companies and hence studies on boards in non-Anglo-American companies have been underexplored. Setiyono and Tarazi (2004) argue that only few companies from the latter type of companies provide information on board members to the public. For our study, we decided to interview various board members of key Surinamese companies as we believe it is interesting to analyze the risk attitudes of boardroom members of the Surinamese companies who are listed on the Suriname Stock Exchange (SSE). Furthermore, in Suriname the two-tier board system is often employed which is known as a system with an insider managerial board (executive directors) and an outsider supervisory board (non-executive directors). In addition, while most studies of companies' executives and decision making have tended to focus either on the CEO or CFO (executive directors), we extend the arguments to include non-executive directors (NEDs). Hence, in this paper we study the influence of various characteristics, like age, functional experience, professional role, over(confidence) of executive and non-executive directors, and the way they operate in a two-tier board, on their risk attitude in the decision making process.

We use a survey-based approach (executed as a structured interview) to provide insight into the people behind the decisions taken in the companies listed at the SSE. The Surinamese context in the sense of cultural differences influences the

way people engage in doing business, thus offering an opportunity to enhance our understanding of the risk attitudes of top executives in an emerging economy. We utilize the survey proposed by De Groot et al. (2012) and adapt it to the Surinamese situation. Our survey harvests information of various characteristics (demographic, personality and company), information related to the role the respondent has in the boardroom and information regarding investment decisions. During the interview, tailor made investment scenarios are presented to the respondents. This approach differs from De Groot et al. (2012), who use a dynamic web-page to tailor each survey to the respondent, thereby automating certain aspects of the structured interview. However, with the limited number of respondents but also the limited responses on the investment scenarios, we are not able to analyze the scenarios in detail.

The remainder of the paper is structured as follows. In Section 2 we describe the relevant theory and research hypotheses. Section 3 discusses the data collection and in Section 4 we present the results of our analyses. Finally, we conclude with a discussion of the main findings.

4.2 Theory and Hypotheses

To guide our empirical analysis we first review available theory and from that we generate a few hypotheses.

The explicit acknowledgement of risk when running companies has been significant in recent years as the consequences of risky decisions have become more noticeable (Sitkin and Pablo, 1992). Decision making under risk is an essential part of the job of top executives and it implies that their decisions affect their companies and environment. An individual's personal experience or beliefs about risk has an impact on the view how a decision maker assesses and reacts to risk, which is usually labeled as risk attitude. The general tendency of the decision maker to take or to avoid risk is referred to by Sitkin and Pablo (1992) as the decision maker's risk propensity and is according to Papadakis and Barwise (2002) the most widely used CEO characteristic. One way to measure this propensity is presented by

MacCrimmon and Wehrung (1990) as a measure of willingness to take risk. Various characteristics (both demographic and personality characteristics) can be viewed as a signal for an executives' risk propensity or willingness to take risk. In addition, an individual's risk tolerance i.e. the amount of risk an individual is comfortably willing to take, is also important when analyzing risk attitudes.

Much empirical literature on executive demographic traits and organizational outcomes has been grounded in the upper echelon theory of Hambrick and Mason (1984). The theory states that organizational outcomes, that is, strategic choices and company performance, can be partially predicted from executives' observable (demographic) characteristics such as age, education, and functional background experiences. Furthermore, most upper echelon studies are related to chief executive characteristics (CEO) as a result of the power he/she possesses in most companies (Hambrick and Mason 1984, Herrmann and Datta 2005). However, executive and non-executive directors are part of each other's decision context (Jensen and Zajac, 2004), and therefore when examining top level decision making it makes sense to study the decision processes of all the members of a board. Graham et al. (2013) explain that CEOs and CFOs have different personal characteristics and career paths and they also differ in terms of attitudes and this has an effect on decision making. Ultimately, it is the board of directors consisting of executive and non-executive directors who determines how to allocate resources, that is, to participate in (risky) investments and this in turn depends on their risk attitude and the willingness to take risk.

Therefore, in our study we also will use demographic characteristics, which in our case will be age and functional background experience as proxies for risk attitudes of board members (executive and non-executive directors).

Age

Age can be considered as both a proxy for an individual's risk propensity and for the extent of experience (Dohmen et al., 2011, Herrmann and Datta, 2005). An executive's age can influence decisions or choices in important ways. Age has been found to be negatively related with regard to the capability to incorporate new information and to make risky decisions (Wiersema and Bantel, 1992). According to

De Groot et al. (2012), the negative relationship between age and the willingness to take risk has widely been recognized. Younger CEOs may be less risk averse, while older executives shall be more concerned about career and financial security and consequently be more inclined to avoid riskier projects (Graham et al., 2013, Hambrick and Mason, 1984). However, age can also reflect experience and a different outlook, allowing executives to take more risks (Graham et al., 2013). In addition, experience could make executives less cautious to the risks underlying the individual decisions. Thus, we stipulate

Hypothesis 1:
Younger executives are more willing to take risk.

Hypothesis 2:
More experienced executives are more willing to take risk.

Functional background experience

According to Jensen and Zajac (2004), functional background experience has extensively been referred to as the demographic characteristic to influence company performance. Hence, in our study the emphasis is on finding a relationship between functional background experience and the risk attitude of top executives. Each executive has specific experience in some functional field and this may shape decision making. The functional background experience, like accounting, finance, legal, or marketing/sales, is found to have a direct impact on the way business problems are determined, on how information is processed, and on how strategic preferences are made by executives (Jensen and Zajac, 2004). Within a group of executives with different functional backgrounds each of them will approach and analyze a problem to a large extent in terms of the objectives and activities of their own respective domains (Dearborn and Simon, 1958). In addition, functional background experience may serve as an indicator for an individual's risk propensity. Hambrick and Mason (1984) classify functional backgrounds in marketing/ sales, product R&D and entrepreneurship as so-called 'output' backgrounds and backgrounds in production, accounting/ finance and process R&D as 'throughput'

backgrounds. Individuals operating within these areas are likely to have different perspectives on the company and its environment. To assess the type of functional background depends on the contextual relation purporting that output backgrounds are related to contexts characterized by greater uncertainty and ambiguity (Herrmann and Datta, 2005). Jensen and Zajac (2004) document that firms led by executives with functional background experiences in finance are more likely to pursue growth through acquisitions and diversification. This leads us to put forward the following hypotheses:

Hypothesis 3.1:
Executives with output backgrounds are more willing to take risk.

Hypothesis 3.2:
Executives with output backgrounds are more likely to engage in R&D investments.

Hypothesis 3.3:
Executives with output backgrounds are more likely to engage in investments related to expansion into new markets.

Hypothesis 4:
Firms with more finance executives are more likely to engage in acquisition investment activities.

Role-dependent risk attitudes

As opposed to upper echelons theory with its demographically based preferences, agency theory focuses on the different governance positions of top executives. The emphasis here is on the positions that top executives have on boards, that is, whether they are executive (inside) directors (CEO, CFO), or non-executive (outside) directors. Agency theory addresses the potential conflicts of interests between executive and non-executive directors thus leading to discussions of how their views differ as a consequence of the different roles they occupy. Therefore, it is relevant to account for the (professional) roles that executives have in the boardroom as a

determinant of risk attitude. According to De Groot et al. (2012), if risk taking is an important principle of a company, and the board as a group decides on the risks to be taken, individual differences in the perceptions of executives in their willingness to take risks are essential determinants of boardroom dynamics.

A company's board serves various professional roles and tasks and these are distributed amongst members based on their expertise, functional background experience and risk propensity, amongst potentially other aspects. Agency theory states that an individual's professional role in a company can influence decision making because of differences in outlook and operation of the different roles played within the board as well as differences in information levels (Gillete et al., 2008). Non-executive directors (NEDs) for example have a supervisory role in the board. As decision makers they may be more cautious than executive directors, where the potential presence of information asymmetry could be an explanation for this behavior.

In addition, Jensen and Zajac (2004), aim to show in their study that top executives (executives and non-executive directors) who are demographically identical but occupy different roles are not necessarily related to the same strategic choices, neither are executives who are demographically different but occupy a similar role. Taken this all together generates the following hypothesis:

Hypothesis 5:
Executives for who the professional role and functional background experience match (are more consistent) are less risk averse and associate with more investment decisions than executives without this match.

(Over-) confidence

"Overconfidence is an important driver of individual choice behavior" (Griffin and Tversky, 1992) and "individuals who are overconfident put too much confidence in outcomes they believe are under their control" (March and Shapira, 1987). Particularly, top executives are presumed to possess such a personality characteristic (Hackbarth, 2008). According to de Groot et al. (2012) and Hackbarth (2008), (over-) confidence can influence decision taking and has an effect on risk taking.

Consequently, it is important to understand how this characteristic affects companies' performance and therefore influences shareholder welfare. Malmendier and Tate (2005) recognize some traits of top executives that are related to company performance and emphasize the importance of (over-) confidence for companies' investments.

Goel and Thakor (2008) argue that top executives are expected to be overconfident because their success is based on past performance, which is in the end related to the risk they take. This suggests that overconfident executives are more willing to take risk. In addition, individuals that rank themselves higher with regard to their willingness to take risk, have a higher risk tolerance (Dohmen et al., 2011).

Ben-David et al. (2007) argue that investment projects are perceived with less risk by an overconfident manager, and also that such a manager assesses these projects with a low discount rate. Therefore, in comparison to a less confident manager, more projects will be perceived to have positive net present value. Hence, an overconfident manager will invest more. This leads us to postulate the following hypothesis:

Hypothesis 6:
More confident executives are more willing to take risk and they also ignite more investments.

Company characteristics

Graham et al. (2013) document that there are various relationships between CEO characteristics and company characteristics. For example, male CEOs relative to female CEOs are more likely to have higher debt ratios and in particular higher short-term debt ratios. Subsequently, more debt generates more risk and higher expected returns, and this is a preference that might be related to executive personal characteristics. Some theories, like those outlined in Heaton (2002) and Hackbarth (2008) indicate that managers' behavioral traits influence the use of debt in companies. Furthermore, Sung and Hanna (1996) identify various financial variables

such as debt which are related to risk tolerance and indicate that debt is positively related to risk tolerance. This brings us to our final hypothesis, which reads as

Hypothesis 7:
The larger is an executive's risk tolerance, the more willing this executive is to use debt.

In the next section we discuss the data collection, and in the subsequent section we present the empirical results for the above hypotheses.

4.3 Data

We collected data using a survey to analyze the risk attitudes of the board members of the companies listed at the Suriname Stock Exchange. We used the survey proposed by De Groot et al. (2012) and adapted it to the Surinamese situation. De Groot et al. (2012) used a dynamic website to tailor the survey questions to individual responses, but we executed the survey as a structured interview in order to tailor the investment scenarios to the individual situations of the respondents.

The survey was pre-tested on individuals with boardroom experience. Once their responses indicated that the questions were clear, we proceeded to send the survey to the respondents.

Respondents

The individuals in our survey work as board members for ten companies listed on the Suriname Stock Exchange (SSE). The survey was sent to both the executive and non-executive directors of these companies where their names were obtained from the companies' annual reports. As Suriname is a small country in terms of population and companies, it became apparent that certain respondents were holding more than one executive post in more than one firm. The solution for this situation is

that these respondents had to complete the survey only once in the capacity of their main position.

The survey, accompanied with an invitation letter, was first sent to the CEOs of the ten listed companies requesting their participation and also their approval to send the survey to the CFOs and the NEDs of the respective companies. In the letter is explicitly declared that the obtained information will be dealt with in confidence. The need to collect sufficient responses, created time between the survey/ interviews and the feedback. Nevertheless, we received a limited number of responses, that is, 13 full surveys. This is a small sample, but we should stress that the population is small too. Taking account of cross positions, 13 respondents amount to about 50% of the relevant board members of stock exchange listed firms in Suriname.

Questions

The purpose of our study is to identify a relation between various characteristics of top executives and their attitudes towards risk in the decision making process. Hence, we gather information on gender, age, functional experience and role within the company. In addition, we gain information on a number of company characteristics (company sector, number of employees and size of the company revenues). Subsequently, we ask the respondents to what extent in the last fifteen years they were involved in investment decisions and the typical size of these certain investments. With investments we mean new market expansion, expansion of production capacity, innovation or R&D projects, IT projects and acquisitions and mergers) they have decided on in the last fifteen years.

Our sample consists of 12 men and 1 woman. The minimum age is 42, maximum is 69 and the average age is 54 years. 9 of the 13 are a NED, while 4 are either CEO or CFO. The sectors that are represented in our sample are 2 in production, 3 in the hospitality sector (hotels and restaurants) and 8 in the financial sector (banking and investment). 2 of the interviewed board members are associated with a firm with an annual turnover of less than 50Mio SRD (Surinamese Dollar is about 0.3 USD), 3 are concerned with a turnover in between 50Mio and 100Mio SRD, and 8 of them deal with an annual turnover in between 101Mio and 500Mio

SRD. In our analysis below we will code these outcomes as 25, 75 and 300, which are the middle values of these three categories. The minimum number of employees is 57, the maximum is 431, while on average the firms have 272 employees.

When we analyze our data we will treat all our 13 respondents as executives.

Table 4.1: Answers to the question: "How often were you involved in investment decisions in the past 15 years in each of the following areas?"

	Frequency (times)				
Area	**Never**	**1-5**	**5-10**	**10-15**	**> 15**
Expansion to new markets	2	9	1	0	1
Expansion of production capacity	1	9	1	0	1
Innovation or R&D	2	7	2	0	1
Information technology	4	6	1	1	0
Mergers and acquisitions	5	8	0	0	0

Table 4.2: Answers to the question: "Which percentage of the annual turnover is usually spent of investments in each of the following areas?"

	Percentages						
Area	**0-1%**	**2%**	**3%**	**4%**	**5-10%**	**11-20%**	**Not relevant**
Expansion to new markets	1	1	1	1	1	2	4
Expansion of production capacity	2	1	1	2	3	0	2
Innovation or R&D	4	2	0	2	1	0	1
Information technology	3	2	3	1	1	0	1
Mergers and acquisitions	4	0	0	0	1	1	5

Table 4.1 gives the responses to the question on investment decisions in the last 15 years, and it is clear there is quite some dispersion. The same holds for the results in Table 4.2 where we report on the question of which percentage of the annual turnover is usually spent on which decisions. Both tables tell us that even though the sample size is small, there is substantial variation in the data.

To measure risk attitude we ask the respondents to make an assessment of their willingness to take risk in general and in their professional role on an eleven point scale. According to Dohmen et al. (2009) this measure is used to examine heterogeneity and aspects of risk attitudes of the top executives. Using the same scale, the respondents are asked to rank the average CEO, CFO and non-executive director in their willingness to take risks.

Table 4.3: Judgment of own risk attitude (in our analysis coded by a number ranging from 1 to 10)

Not willing at all										Willing to a large extent	Average
0	1	2	3	4	5	6	7	8	9	10	
"In general, are you willing to take risk or are you someone who prefers to avoid risk?"											
0	0	0	1	1	3	2	3	3	0	0	6.08
"Given your position in the firm, are you willing to take risk or are you someone who prefers to avoid risk?”											
0	0	0	2	2	2	1	5	1	0	0	5.62

Table 4.4: Judgment of own risk attitude of types of board members: "Do you think they are willing to take risk or are they someone who prefers to avoid risk?" (in our analysis coded by a number ranging from 1 to 10)

	Not willing at all										Willing to a large extent	Average
	0	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	
CEO	0	0	1	0	1	3	3	3	1	1	0	5.77
CFO	0	1	1	3	1	3	1	3	0	0	0	4.46
NED	0	0	2	2	2	3	2	0	2	0	0	4.69

Table 4.3 shows that there is substantial variation in the self-reported values on own risk attitude. Also, the average value of the judgment about the own risk attitude in general is slightly higher than that of the judgment given the position that one has within the firm.

Table 4.4 gives the frequency of answers to three statements on the risk attitude of three types of board members. Clearly, a CEO is believed to be more willing to take risk than a CFO or NED, which corroborates with the results in De Groot et al. (2012), who could interview a much larger sample of individuals.

Table 4.5: Four scenarios in words

Scenario 1

At a board meeting where the strategy of your firm has been discussed it became apparent that expansion is possible using a new marketing channel in another country. Your marketing and sales department estimates that the costs are x Mio SRD. If the plan fails, this investment is gone, but no other costs are to be expected. It is uncertain whether the new marketing channel really works, but the people at the relevant department estimate the success rate as y%. On a scale of 1 (not risky at all) to 7 (very risky), how do you estimate this risk of this investment?

Scenario 2

Your firm considers an investment to increase production. The total amount is x Mio SRD. If it so turns out that the investment does not work and production does not increase, then the investment amount is lost but no other losses are incurred. The estimate that this project will be successful is y%. On a scale of 1 (not risky at all) to 7 (very risky), how do you estimate this risk of this investment?

Scenario 3

The R&D department of your company recommends a new production technique. To see whether this technique works, some research has to be done. If the technique fails, the only costs were these research costs. Development costs are estimates as x Mio SRD, and the probability that the new technique is indeed applicable in your firm is y%. On a scale of 1 (not risky at all) to 7 (very risky), how do you estimate this risk of this investment?

Scenario 4

The IT department of your firm considers the implementation of a new system which in the longer term could lead to substantial savings. Costs of this implementation are estimated at x Mio SRD. If the new system does not meet its demands, then this investment amount is lost, but no other damage is done. The success rate of this project is estimated by the IT department as y%. On a scale of 1 (not risky at all) to 7 (very risky), how do you estimate this risk of this investment?

Table 4.6: Four scenarios and four probabilities, the numbers

Scenarios

1	26000000	31000000	15000000	20000000
2	20000000	26000000	31000000	15000000
3	78727200	98409000	59045400	1.18E+08
4	1.02E+08	76500000	1.28E+08	1.53E+08
5	8000000	10000000	11000000	6000000
6	59045400	1.18E+08	78727200	98409000
7	63000000	52500000	31500000	42000000
8	54000000	72000000	90000000	1.08E+08
9	70000000	90000000	1.00E+08	50000000
10	13200000	26400000	17600000	22000000
11	98409000	78727200	1.18E+08	59045400
12	20800000	15600000	26000000	31200000
13	1.28E+08	1.53E+08	1.02E+08	76500000

Probabilities (%)

1	85	75	80	70
2	75	85	90	80
3	95	80	75	90
4	80	90	70	95
5	90	75	85	70
6	70	80	90	80
7	75	70	80	85
8	80	75	90	70
9	70	80	75	85
10	75	85	90	70
11	75	70	80	85
12	90	70	85	75
13	70	85	95	75

Answers to the questions on risk

1	6	5	3	3
2	7	6	5	5
3	2	6	6	6
4	-	-	-	-
5	-	-	-	-
6	4	3	6	6
7	7	7	7	7
8	5	4	5	5
9	4	4	5	5
10	-	-	-	-
11	-	3	3	3
12	2	-	-	-
13	6	6	6	6

Finally, respondents are asked to assess four types of investment scenarios with different investment possibilities originating from the answers they have given to the question on their company's annual revenues. Each respondent obtained four investment scenarios with two varying parameters, that is, the size of the initial investment that is lost in case of the investment fails, varying for each respondent between 30% to 60% of their specific company's annual revenues, and the probability of success, which also varies for each respondent between 70% and 95% for each investment scenario. The scenarios are presented in Table 4.5 and the parameter setting as well as the answers are presented in Table 4.6. There are a few missing observations here, but still we can use some of the outcomes in our analysis, as we will indicate in the next section.

4.4 Results

This section contains the correlations and regression model outcomes for the data presented in the various tables. Of course, the sample size is small, as we have data on only 13 board members, but then still, we aim to falsify the hypotheses in Section 2.

The first hypothesis H1 predicts that younger executives are more willing to take risk. To examine this hypothesis we regress the answers to the two questions in

Table 4.3 on a constant and the variable "age". With White-corrected standard errors we get the parameter estimates -0.085 and t-statistic -1.903 (p value is 0.084) and -0.095 with t-statistic -1.532 (p value is 0.154), respectively, both for 13 observations. So, there is some evidence that older executives are less willing to take risk, and hence we obtain moderate support for hypothesis 1.

The second hypothesis H2 predicts that the more experience companies' executives have, the more willing they are to take risk. We base experience on the answers to the questions displayed in Table 4.1. We coded "Never" as 0, 1-5 is coded as 3, 5-10 is coded as 7.5, 10-15 is coded as 12.5 and more than 15 is coded as 20. Next, we sum the answers to the 5 categories and call this variable "experience". A regression of the answers to two questions in Table 4.1 on a constant and this "experience" variable gives an estimated parameter of -0.025 (White corrected t statistic -1.768 and p value 0.108) and -0.026 (t statistic -2.350 and p value 0.071). These results imply that more experience leads to a smaller willingness to take risk. Hence, hypothesis 2 is not supported.

The third hypothesis H3 deals with the effect of output background. 2 of the 13 respondents have such an output function. We now regress the two variables with the answers to the questions in Table 4.3 on a constant and a 1-0 dummy for the output function, and obtain t statistics equal to -1.382 and -0.107. A similar exercise is done for the answers to the questions in the third and first rows of Tables 4.1 and 4.2. For the R&D investments questions we obtain a (white-corrected) t statistic of 2.408 and 1.236, respectively. And for the question on market expansions we obtain t statistics with values -0.721 and 1.316. In sum, we do find support for the second item of Hypothesis 3, and can conclude that executives with output backgrounds are more likely to engage in R&D investments.

The fourth hypothesis H4 posits that companies with more finance executives are more likely to engage in acquisition investment activities. 8 respondents indicate to be active in the financial sector, and 5 in either industrial production or hotels/restaurants. We create a dummy variable "financial sector" which is 1 for the financial sector and 0 otherwise. The answers to the five questions in Table 4.2 are coded as "not relevant" is coded as 0, 0-1% as 0.5, 2%, 3%, 4% as 2, 3, 4, 5-10% as 7.5 and 11-20 % as 15.5. A regression of the answers to the last

question in Table 4.1 on a constant and the financial sector dummy yields an estimated parameter 2.025 (with White corrected t statistic 2.905 and associated p value 0.014), whereas a regression of the answers to the last question in Table 4.2 gives an estimate of 3.376 (t statistic 1.467 and p value 0.176). So, there indeed seems evidence that finance executives are more likely to engage in acquisition activities.

Hypothesis 5 (H5) we predict that the more consistent an executive's professional role and functional background experience are, the higher the risk tolerance, the more investment decisions. We define the consistency of the role and the functional experience as the sum of the answers to the questions in Table 4.1. The investment decisions are the answers to the questions in Table 4.2. Regressing the answers to each of the questions in Table 4.2 on the "consistency" variable, we get the estimates 0.041 (with White t statistic's p value of 0.421), -0.004 (0.896), 0.029 (0.212), 0.039 (0.001), and 0.012 (0.579), respectively. Hence, only in the case of investments in IT projects (the fourth question) we find that more consistency leads to more investment decisions. So, for IT projects we find support for this hypothesis, and for all other investments we do not find such support.

Hypothesis 6 (H6) states that more confident executives are more willing to take risk and they also ignite more investments. When we regress the answers to the questions in Tables 4.1 and 4.2 on a constant and the two answers to the questions in Table 4.3, we get nine insignificant regression models (with p values of the joint F test all much larger than 0.05) except for the case of R&D projects in Table 4.2. There the p value is 0.049. The key significant parameter associates with the second question in Table 4.3, and hence we can conclude that when board members indicate that they are willing to take risk given their position in the firm, that then the percentage that the firm invests in R&D is larger.

Finally, the seventh hypothesis H7 predicts that the higher an executive's risk tolerance, the more willing he or she is to use debt. For each of the four scenarios, we create the following variables. The answers to the question on annual turnover are coded as 25Mio SRD for answer category 1, 75Mio SRD for category 2 and 300 Mio SRD for category 3. Then we divide the size of the investment for each of the scenarios by these amounts. Next, we multiply the probability of success of

the project with this outcome, and finally we multiply this with the statement on the riskiness of the project, given the probability of success, and its size relative to the firm's turnover. We take this new variable as a measure of a larger willingness to accept a risky project. Using a four-equation regression model where the "willingness" is on the left-hand side and the answers to the first question in Table 4.3 is on the right-hand side, we obtain a pooled parameter estimate equal to 9.184 with t statistic 1.698 and p value 0.099. For the second question in Table 4.3, using the same type of model, we obtain a parameter estimate equal to 6.107 with t statistic 1.176 and p value 0.248. So, we seem have some mild evidence in support of H7.

4.5 Conclusion

In this paper we have analyzed the risk attitudes of board members of ten companies in a developing country. The sample of respondents is small, but this is also due the fact that the size of the population is small. As far as we know, this is the first ever study on such risk attitudes for a country with a developing economy.

Our hypotheses were all constructed from the literature on risk attitudes where the data were always collected for western industrialized countries. Most likely due to the small sample size we could not find much evidence for various hypotheses, but still various hypotheses did receive support.

To summarize, we find for this country with a developing economy and its firms that there is some evidence that younger executives are more willing to take risk and that executives with output backgrounds are more likely to engage in R&D investments. Also, we document that finance executives are more likely to engage in acquisition activities, and for IT projects that executives for who the professional role and functional background experience match are less risk averse and associate with more investment decisions than executives without this match. Finally, when executives indicate that they are willing to take risk, given their position in the firm, the percentage that the firm invests in R&D is also larger.

Naturally, the main limitation of this study is the sample size, but we believe that some interesting conclusions could be drawn. The main one seems to be

that the differences between risk attitudes of board members of companies in a country with a developing economy do not differ tremendously from those of board members in countries with developed economies. In addition, compared to developed economies, developing economies such as Suriname suffer from limited disclosure of information.

Much more future work can be done in this area. Some countries with developing economies are much larger than Suriname, and perhaps data collected for those countries can reveal more insights into the risk attitudes of board member of firms.

Chapter 5

Risk attitudes in the boardroom and company performance:

Evidence for an emerging economy

Abstract

We personally interview thirteen board members of seven (out of the ten) companies listed at the Suriname Stock Exchange and ask questions about their past and current decisions and on their risk attitudes. Next, we correlate the answers to company performance in between 2003-2011, like earnings per share, stock returns, book value and market value. Recent literature on risk attitudes in the board, which usually draws on western economies, guides our formulation of hypotheses. At the same time we also perform some exploratory analyses. Our main result is that, for this emerging economy, more risk adversity leads to better firm performance.

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5.1 Introduction

The performance of firms has been of great interest for scholars in various areas of business. When the members of the board of a company (the top executives like Chief Executive Officer, CEO and Chief Financial Officer, CFO) are regarded as a company's essential human resources, several properties concerning their background and skills become important, as these may have a strong effect on firm performance. Such a hypothesized effect is in line with the upper echelons theory which states that top executives' characteristics have an impact on organizational outcomes such as strategies and company performance (Hambrick and Mason, 1984). For example, the demographic characteristics of executives and various behavioral traits are often used as proxies for risk attitudes and these are then in turn used to describe corporate decisions, where these decisions are known to affect the company. Indeed, as Bertrand and Schoar (2003) also acknowledge in their study, it seems that current empirical studies usually rely on company-specific or industry-specific characteristics to explain company performance, and that these studies neglect the potential role that individual executives may play in defining organizational outcomes.

Risk is an important element in financial decision-making. Graham et al. (2013) find that company policies are significantly related to the personality characteristics of executives, and these authors document that more risk-tolerant CEOs initiate more acquisitions. Malmendier and Tate (2005) analyze the relation between managerial overconfidence and corporate investment decisions and they show that overconfident CEOs, who are more willing to bear higher risks, take on more value-destroying mergers. Hamberg (2008) surveys top executives and reports that for these managers success is associated with low risk and high financial returns. This implies that perceiving risk in a certain way might influence many different financial decisions.

The current literature on risk attitudes exclusively focuses on firms in western industrialized countries. In our study we will consider risk attitudes for board members in a country with an emerging economy.

In our present study we relate risk attitudes of board members of the companies listed on the Suriname Stock Exchange (SSE) with company performance. Suriname is a country in South America, with a population of about half a million inhabitants, and it is an emerging economy. Our main interest concerns the risk attitudes of Surinamese top executives who are responsible for (financial) decisions and how these attitudes correlate with company performance. Thus, rather than focusing on company-specific or industry-specific characteristics, we use personal characteristics of executives and we use direct questions as proxies for their risk attitudes to explain the relation with company performance.

We personally interview thirteen board members of seven (of the only ten) companies listed at the Suriname Stock Exchange. We ask questions about their past and current decisions and on their risk attitudes. Explicitly connecting risk attitudes of CEOs and CFOs with actually observed company performance like stock returns has never been done before, and this is usually due to lack of data. Most surveys on risk performance in western countries rely on anonymous responses, but as we personally interviewed the thirteen executives, we can link personal information with their respective companies. Of course, we have access to only a small sample of data, which follows from the fact that we consider an emerging economy, but then still, this is the first study of its kind.

The remainder of the paper is structured as follows. In Section 2 we provide the relevant theory and research hypotheses. Section 3 presents the data collection and Section 4 summarizes the results of our analyses. Finally, in Section 5 we conclude with a discussion of the main findings.

5.2 Theory and Hypotheses

Various characteristics of top executives are often used as proxies for their risk attitudes. These proxies are then used to explain the performance levels of the company to indicate how top executives affect the company. In our study we use (self-stated measures of) overconfidence, age and functional background experience as proxies for risk attitudes of thirteen Surinamese board members. Recent literature

on risk attitudes in the board, which usually draws on western economies, guides our formulation of hypotheses. As of yet, no such literature exists for emerging economies.

Overconfidence and book to market equity ratio (BE/ME)

Executives are often viewed as having their own methods when making corporate decisions such as investment, financing, and other strategic decisions, and as such their personal characteristics put a mark on the companies they control (Bertrand and Schoar, 2003). For example, Malmendier and Tate (2005, 2008) find that overconfident CEOs have higher investment-cash flow sensitivities and are more likely to participate in value-destroying mergers. De Groot et al. (2012) show that overconfident board members demand a lower expected return and sense less risk of a given investment, and therefore are more willing to take risk. In Ben-David et al. (2010), it is documented that companies with overconfident executives seem to pursue more investments and more debt financing. In addition, Rau and Vermaelen (1998) indicate that in companies with low BE/ME ratios (which are usually growth companies), executives are more likely to overestimate their own abilities to manage acquisitions, that is, their hubris leads to overconfidence (see also Malmendier and Tate, 2008 and Roll, 1986). As growth companies are companies with high stock returns in the past and high past growth in earnings and cash flow, this presumably strengthens the executives' own actions to initiate acquisitions.

Malmendier and Tate (2008) also argue that overconfidence is related to the executives' views that their company is undervalued by outside investors who seem less optimistic about the company's outlook. Furthermore, to the extent that executives are more willing to endeavor in risky projects but with greater value, acquisition returns among high BE/ME companies may be larger (Rau and Vermaelen, 1998), and as such increase company performance. Companies with high BE/ME ratios are usually classified as companies with low stock prices, poor earnings and relatively few growth investment opportunities. Taking all together, and based on the available literature, we thus put forward the following two hypotheses:

Hypothesis 1.1:

Overconfident executives are more likely to work in growth companies with low BE/ME ratios.

Hypothesis 1.2:

Overconfident executives in value companies with high BE/ME ratios are more likely to pursue more new investments.

Executive demographic characteristics versus book to market equity ratio (BE/ME), market capitalization (ME) and stock returns

According to Graham et al. (2013), young and confident executives who do not have financial or accounting backgrounds are more likely to work for growth companies. In addition, risk-tolerant CEOs are more likely to work in companies which performed good in the past (high historical growth) and also with high expected growth. Barry et al. (2002) and Fama and French (1995, 1998), among others, classify growth companies as companies with persistently high earnings and with low BE/ME ratios. On the other hand, high BE/ME companies, commonly known as value firms, may have been poor performers in the past (Cain and McKeon, 2014).

Cain and McKeon (2014) also state that in companies with high BE/ME ratios (value companies), top executives and large stakeholders will be more prudent before accepting a major transaction which may well affect the survival of the company. BE/ME apparently is an accounting variable that plays a significant role in explaining the behavior of stock returns and acts as a measure for past performance. Bodeutsch and Franses (2014) report related evidence for companies listed at the Suriname Stock Exchange (SSE), and in that sense the listed firms have similar properties as firms in western countries.

In addition, Graham et al. (2013) argue that company size can be important for a variety of reasons. A larger size can suggest a certain amount of solidity and it has consequences for growth. In the modern finance literature, the company size has been measured typically in terms of market capitalization, ME, that is, the number of shares outstanding multiplied by a stock's closing price. In our study company size

is defined as market capitalization which is the market approximate of a company's value (see also Bodeutsch and Franses, 2014).

Furthermore, much research has evolved in identifying company characteristics such as ME, BE/ME which explain differences in common stock returns. Fama and French (1998) indicate that stocks of small companies (low ME) have higher average returns than stocks of large companies (high ME). This is usually called the size effect. And, companies with high BE/ME ratios have higher average returns than companies with low BE/ME ratios. This is known as the value effect. Cain and McKeon (2014) argue that among high BE/ME companies, risk taking CEOs are associated with significantly higher announcement returns. One possible explanation for this pattern is that among value companies with relatively few growth opportunities, risk taking CEOs identify and select projects with valuable new growth prospects.

Age

Hambrick and Mason (1984) indicate that some studies show consistent results with regard to the correlation between the age of top executives and company characteristics. Young executives are usually related to company growth. In these studies it is also identified that volatility of earnings and sales is linked to young executives reflecting that in particular youthful executives take risks (Hambrick and Mason, 1984). In contrast to younger executives, older executives are more conservative and shall be more concerned about career and financial security, and thus avoid riskier projects. Taking the above together, we put forward the following two hypotheses:

Hypothesis 2.1:
Younger executives are more likely to work for growth companies with low BE/ME ratios, whereas older executives are more likely to work for value companies with high BE/ME ratios.

Hypothesis 2.2:

Younger executives working in value companies with high BE/ME ratios are more willing to take risk and thus create higher stock returns.

Functional background experience

According to Jensen and Zajac (2004), functional background experience has extensively been referred to as the demographic characteristic to influence company performance. Hambrick and Mason (1984) classify functional backgrounds into output and throughput backgrounds. Output backgrounds concern marketing and sales positions, entrepreneurship and product R&D emphasize growth (see Hambrick and Mason, 1984), and these output backgrounds tend to show a positive relation with firm performance measures (Norburn and Birley, 1988). Furthermore, Norburn and Birley (1988) add that throughput backgrounds, which are associated with production, accounting and finance and process R&D, demonstrate a relation with larger companies, but are negatively related with firm performance measures. Thus, we stipulate:

Hypothesis 3.1:

Executives with output backgrounds are more likely to work for growth companies with low BE/ME ratios.

Hypothesis 3.2:

Executives with throughput backgrounds are more likely to work for companies with high ME.

Finally, when we combine the arguments with regard to age and functional background experience, we arrive at the following hypothesis:

Hypothesis 4:

Young executives with output backgrounds are more likely to work for growth companies with low BE/ME ratios.

Below we will examine these hypotheses for a sample of surveyed board members for the emerging economy of Suriname.

5.3 Data

We personally interviewed thirteen board members of seven (of the ten) companies listed at the Suriname Stock Exchange and ask questions about their past and current decisions and on their risk attitudes. We executed the interviews in the period March – April 2014. We also succeeded to arrange face to face interviews with some of the top executives of Suriname. The questions for the interview are derived from the survey proposed by De Groot et al. (2012). We ask the respondents to make an assessment on an eleven-point scale of how they perceive themselves in general and in their professional role with regard to their willingness to take risk.

The two questions about risk are

R1: Are you, in general, someone who is willing to take risk?

where an answer can be given on a scale of 0 (totally not willing) to 10 (very willing), and

R2: Are you, in your position in your company, someone who is willing to take risk?

where again an answer can be given on a scale of 0 (totally not willing) to 10 (very willing).

Furthermore, we ask the respondents to indicate how often they were involved, in the last 15 years, in investment decisions in five categories. The answer categories varied from 0, 1-5 times, 5-10 times, 10-15 times, and more than 15 times, in the last 15 years. The categories are

I1: Expansion to new markets
I2: Extension of production capacity
I3: Innovation or R&D processes
I4: IT projects
I5: Mergers and acquisitions

We also asked the respondents to point out which percentage of the annual turnover of their company is usually used for investments in one of the same five categories. The answer options are 0-1%, 2%, 3%, 4%, 5-10%, 11-20%, 21-30%, 31-40%, 41-50%, more than 50%, or not applicable. We code these answers by taking the middle values of each of the answer options, and label them as

C1: Expansion to new markets
C2: Extension of production capacity
C3: Innovation or R&D processes
C4: IT projects
C5: Mergers and acquisitions

At the end of the interview the respondents are asked about their functional background and their age. Two of the interviewees have an output functional background. The other nine have a throughput background.

To measure firm performance we have access to data since 2003 until and including 2011 on Stock returns, Market value (ME), Book value (BE) and Earnings per share (see Bodeutsch and Franses, 2014). We employ the firm-specific factors BE/ME and ME for the hypotheses in the previous section. BE/ME is an accounting variable and acts as a measure for past performance, whereas company size is defined as market capitalization. In addition, we use the data in levels (like Market value in 2003, Market value in 2011, Average Market Value across 2003-2011) and also in growth rates (like percentage difference in Book value in 2011 relative to 2003). The board members who we interviewed have been affiliated with their companies for a long time, and hence we can study changes in firm performance and their link with board members' characteristics.

5.4 Results

Before we look at the estimation results that are associated with the hypotheses, we first check whether the answers to the various questions are related in order to see if there is any face validity of the survey results. For that purpose we run regressions in which we regress the growth in Market Value, the growth in Book value, the growth in Earnings per Share and the Stock Returns, all for 2011 relative to 2003, on the answers in questions I1 to I5. Indeed, one would hope to see that investments in the five categories did indeed benefit the firms' performance.

The estimation results are reported in Table 5.1. We see that 19 out of 20 parameter estimates have the expected positive sign. We also see that 13 of the 20 estimates are significantly different from 0, at the 10% level. From the table we can read which investments in the last 15 years (I1 to I5) have helped growth in four dimensions. The variables I1-I4 have positive effect on Market Value growth, I5 mainly on Book value growth, I1, I2 and I4 on growth in Earnings per share, and I1-I4 for positive stock returns. Hence, even though the sample size is small, the respondents' answers do match with actually observed firm performance.

It could have been the case that the answers to I1 through I5 concern an endogenous variable, as the board members of course are aware of their own firm performance. We therefore examined and tested for endogeneity, where we used the answers to C1 through C5 as the instruments. Of course, the sample size is small, and hence the power of tests for endogenous regressors is small. We found in only one case some mild evidence of an endogenous regressor, and in all other cases the p values were very far away from 10%. So, we are tempted to conclude that the regression results in Table 5.1 can interpreted as that the thirteen board members consciously responded to our survey questions.

We now turn to the hypotheses. Due to scarcity of our data, our regression models cannot contain more than two variables. All models contain an intercept but we do not report estimation results for the intercept, only for the variables that are included. Next, we will always report p values based on White heteroskedasticity-consistent standard errors.

Hypothesis 1.1 predicts that overconfident executives are more likely to work in growth companies with low BE/ME ratios. A regression of Average BE/ME (averaged over the years 2003 to 2011) on a constant and answers to R1, the estimated parameter is 0.129 with a p value 0.502. A regression of BE/ME of just 2011 on a constant and answers to R1, we get a parameter 0.047 and a p value 0.764, while for BE/ME of 2003 we get the estimate 0.212 and associated p value 0.916.

When we run the same three regressions, now with the answers to R2 as the independent variable, we obtained the parameter estimates 0.314 with p value 0.046, 0.208 with p value 0.118 and 0.420 with p value 0.028, respectively.

In sum, as hypothesis H1.1 has predicted negative-valued parameter estimates, but we generally find evidence against this hypothesis. Hence, when the board members think about their risk attitude in their professional role then we see that confident executives are more likely to work in growth companies with high BE/ME ratios.

One potential explanation of this finding can be that our companies considered all are in business for quite some time, and new entries are rare in this emerging economy.

Hypothesis H1.2 states that overconfident executives in value companies with high BE/ME ratios are more likely to pursue more new investments. To examine this hypothesis, we regress the scores on I1 to I5 and C1 to C5 on the answers to R1 (or R2), where we now include two variables. These variables are the answers to R1 and the answers to R1 when multiplied with Average BE/ME.

The results for I1 to I5 are as follows (and details can be obtained from the authors). There are no significant findings for I1 to I4 and R1 and the interactive term. However, a regression of I5 on R1 and R1 times Average BE/ME gives a parameter estimate -0.412 with p value of 0.110 and an estimate 0.082 with p value 0.018, respectively. So, we do find support for Hypothesis 1.2 only for Mergers and Acquisitions.

When we turn from the individual to the company, and thus look at the answers to C1 to C5, and the regressions on R1 and R1 times Average BE/ME, we get significant parameters for the interaction terms for C2 and C4, where these

estimated parameters are -0.156 (p value 0.074) and -0.112 (p value 0.040), respectively. Here we thus find significant evidence against Hypothesis 1.2 for extension of production facilities and IT projects.

Turning to the answers for the second self-stated risk variable R2, with also the interaction term, we again find support for Hypothesis 1.2 for Mergers and Acquisitions as the estimated parameters are -0.710 with p value 0.010 (for R2) and 0.131 with p value 0.006 for the interaction term. Additionally, for C2, C3, and C4 the interaction term parameters are -0.288 with p value 0.003, -0.154 with p value 0.061 and -0.197 with p value 0.023, respectively. So, here there is strong support against Hypothesis H1.2.

In sum, in contrast to the findings for western industrialized countries, we find for our data on an emerging economy some counter evidence for the hypothesis that overconfident executives in value companies with high BE/ME ratios are more likely to pursue more new investments.

Hypothesis H2.1 states that younger executives are more likely to work for growth companies with low BE/ME ratios, and thus that older executives are more likely to work for value companies with high BE/ME ratios. When we regress Average BE/ME, BE/ME of 2003 and BE/ME of 2011 on Age, then for none of the three regressions we obtain significant parameters. So, there is no support for H2.1.

Hypothesis H2.2 says that younger executives working in value companies with high BE/ME ratios are more willing to take risk and thus create higher stock returns. When we run the same regressions but now including Age and Age times R1, then neither of these has significant parameters. In contrast, when we regress Average BE/ME, BE/ME of 2003 and BE/ME of 2011 on Age and Age times the second risk variable R2, we get all significant parameters for the interaction term and these are 0.009 with p value 0.003, 0.011 with p value of 0.004 and 0.006 with p value 0.003, respectively. Hence we find, in contrast to Hypothesis H2.2, that older board members, who are also more risk taking in their professional role, work for value companies with high BE/ME ratios. So, again we find significant evidence against the hypotheses.

To examine Hypothesis H3.1, we regress Average BE/ME (averaged over the years 2003 to 2011), BE/ME in 2003 and BE/ME in 2011 on an intercept and a

dummy for Output function (only 2 of the 13 interviewees). We do not find any significant parameters. Similarly, to examine Hypothesis 3.2, we regress Average ME, ME in 2003 and ME in 2011 on an intercept and a dummy for Throughput function (11 of the 13 interviewees), but again we find no significant parameters.

Finally, to examine Hypothesis H4, we regress Average BE/ME, BE/ME in 2003 and BE/ME in 2011 on an intercept, Age and Age times a dummy for Output function (only 2 of the 13 interviewees), and again we find no significant parameters.

So far, we tested the various hypotheses, and basically we find either no supporting evidence or we find strong evidence against the hypotheses.

Finally, we consider potential correlations between the actually observed growth rates in the four firm performance measures and the answers on the self-stated risk questions. The estimation results are presented in Table 5.2. The bottom row of that table shows that R2 is most often significant and always obtains a negative estimated parameter. This means that a higher risk attitude in their professional role leads to negative growth in all four dimensions. So, here, for this emerging economy, more risk adversity apparently leads to better performance.

5.5 Conclusion

In this paper we have analyzed the relation between risk attitudes of thirteen board members of seven (of the ten) companies and company performance in an emerging economy Suriname. Even though the sample of respondents is small, this is the first ever study on such risk attitudes of board members for an emerging economy.

Our hypotheses were all designed from the literature on risk attitudes and company performance where the data have always been collected for western economies. Most likely due to the small sample size we could not find much evidence for various hypotheses, but still we find some significant evidence, and then usually in contrast to the postulated hypotheses.

To summarize, we find for this emerging economy substantial evidence that when board members think about their risk attitude in their professional role that over-(confident) executives are more likely to work for growth companies with high

BE/ME ratios, which is significant evidence in contrast to the posited hypothesis that overconfident executives are more likely to work in growth companies with low BE/ME ratios. With regard to the hypothesis that overconfident executives in value companies with high BE/ME ratios are more likely to pursue more new investments, we only find contrasting evidence for mergers and acquisitions. We also find the same support if we turn to the executives' professional role. When we turn to the individual we find significant support against the relevant hypothesis for the extension of product capacity and IT projects. Finally, we find that younger executives are more likely to work for value companies with high BE/ME ratios, and that older board members who are also risk taking in their professional role work for value companies with high BE/ME ratios.

Most interestingly, we find for this emerging economy of Suriname, that more risk adversity by board members apparently leads to better firm performance.

We now provide a speculative discussion on why results for an emerging economy could be different from those of western economies. Perhaps the impact of cultural differences is important. Culture would be expected to affect the way firms are formed and financed and the way people engage in doing business (Deegan and Unerman, 2011). For example, Graham, et al. (2013) find evidence that US and non-US firms differ because of the differences in executives' characteristics and risk attitudes. According to Allen (2005), this can possibly be explained by firms outside the US having different norms.

Suriname as an emerging economy ranks on the 162nd place (out of the 189 places) with regard to the ease of doing business (World Bank, 2015). This is in contrast to western economies such as the US who ranks on the 7th place and the Netherlands on the 27th place. A low ranking on the ease of doing business index means that the regulatory environment does not contribute sufficiently to set up and operate a local company (World Bank, 2015). The outdated legislation in Suriname is not conducive to investments (Ministry of Labor, Technological Development and Environment, 2013). Although the government has made some efforts to ease the procedures of starting a business in 2012-2013, they did not achieve this goal completely. For example, an entrepreneur in New Zealand must pass one procedure and waits half a day to start a business whereas an entrepreneur in Suriname must

pass thirteen procedures and now waits 84 days (World Bank, 2015). Following these arguments, it can be concluded that the business environment in Suriname is not as developed to attract entrepreneurship which can result in people preferring to work and stay in safer jobs, thus ultimately are less willing to take risk. Hence, it seems to some extent imbedded in current Suriname's culture to choose for certainty when doing business. Whether our findings for this developing economy extend to other emerging economies is something to be considered in further research.

Table 5.1: Estimation results of a regression of the growth in firm performance measures (2011 relative to 2003) on an intercept and the answer to the questions on investment decisions in the last 15 years in the categories I1: Expansion to new markets, I2: Extension of product capacity, I3: Innovation or R&D processes, I4: IT projects and I5: Mergers and acquisitions. The table reports the parameter estimates and the associated White heteroskedasticity-consistent p values. The sample size is 13. In bold are the parameter estimates that are significant at the 10% level.

	Growth in			
	Market value	**Book value**	**EPS**	**Stock price**
Question				
I1	**46.48 (0.002)**	9.826 (0.252)	**55.03 (0.019)**	**72.73 (0.002)**
I2	**47.72 (0.002)**	8.239 (0.409)	**57.62 (0.011)**	**74.30 (0.001)**
I3	**39.08 (0.002)**	**11.01 (0.099)**	-62.64 (0.738)	**65.38 (0.002)**
I4	**56.18 (0.040)**	21.44 (0.184)	**66.17 (0.053)**	**85.20 (0.050)**
I5	126.8 (0.162)	**106.3 (0.013)**	181.5 (0.138)	200.8 (0.153)

Table 5.2: Estimation results for the regression of the observed growth rates in Market Value, Book Value, earnings per share and Stock Price, on the answers to the risk questions R1 and R2. The table reports the parameter estimates and the associated White heteroskedasticity-consistent p values. The sample size is 13. In bold are the parameter estimates that are significant at the 10% level.

	Growth in			
	Market value	**Book value**	**EPS**	**Stock price**
Question				
R1	21.58 (0.809)	-55.20 (0.186)	-60.10 (0.548)	-7.512 (0.957)
R2	-103.9 (0.240)	**-93.24 (0.003)**	**-207.4 (0.035)**	-183.8 (0.151)

Chapter 6

Conclusion and recommendations

6.1 Conclusion

In this chapter, we provide a summary of the main findings of the four empirical studies, the limitations and we point out various policy recommendations.

Our research provides an impression of an emerging financial market. The research is executed in Suriname which has an emerging economy. Given the emphasis being placed that stock markets in emerging economies are often viewed as a source of financial development and that a well-functioning stock market can ultimately lead to economic growth, it is of interest to examine the Suriname Stock Exchange (SSE).

In Chapter 2 we studied the stock exchange of Suriname and we provided the first ever quantitative analysis of the stock returns of ten companies listed at the SSE. We documented that average returns over the years 2003 to and including 2011 are not high, and that inflation-corrected returns are often negative, at least on average across these years. We showed that stock returns patterns across the ten stocks have similar behavior in various dimensions, and that estimates of conditional volatility parameters for the index bear similarities with index returns in developed countries. One partial conclusion of our study is thus that the SSE index shows some signs of weak-form efficiency. However, the way the prices are set indicates some level of illiquidity in the market. Further, there are no designated market traders, and trades occur on average only twice a month with low volumes of such trades. Even though the SSE is operationally inefficient, the time series properties of the index mimic those that are usually found in other stock markets. In sum, we must conclude that there still is much more efficiency to be gained for the SSE.

In Chapter 3 we discussed the size and value effects of Suriname. We considered the ten foremost important companies in Suriname, their performance on the Suriname Stock Exchange and the link between that performance and

fundamentals. Using the approach of Fama and French (1992), we have found that there is apparently no size effect, but there is a value effect. Book-to-market equity (BE/ME), which is the ratio of the book value of common equity to its market value has the expected positive effect on stock returns. Companies with a high BE/ME ratio (known as value firms) are related to poor performance in the past (low stock prices, poor earnings, and distress). So, also in Suriname, value firms have high stock returns which can be seen as an important factor for the Surinamese market and ultimately the investor. We could not find any significant size effects in Suriname, but this may also be due to the small sample. The sign of the size effects is different than usually encountered (as it is positive), and this corroborates well with the findings in related studies on emerging markets.

The implications of our study are the following. Until now, the Suriname Stock Exchange has not been fully considered as a source of capital. However, Suriname can benefit from the evidence of our study for the following reasons. Fama and French (1992) and others report that size and book-to-market equity are considered as variables which can provide information from stock prices about risk and expected returns. Value and growth are two fundamentals for stock selection and these reported variables can thus be useful. Value firms are perceived as underpriced firms (cheap stocks) and not appreciated by the market. If the Surinamese market realizes that the prospects of value firms are not as weak as proposed by the developments in the recent past, the stock price will increase and this in turn could result in investors gaining an interest in those firms. Value investors have been rewarded with a large risk premium. In addition, value firms not listed on the SSE, seeking capital to finance their growth, can be motivated to be listed on the SSE. According to the indicators size (measured by the number of companies listed and the MCAP/GDP ratio) and liquidity (measured by turnover/GDP and turnover ratio), the SSE has not grown remarkably in the past years (see Bodeutsch and Franses, 2014). As a result, these value firms can ensure that the number of firms listed on the SSE increases.

The listed companies on the SSE may contribute in the process of economic growth. This increases an interest to understand more about the executives of these firms. Thus, we need to consider the companies' top executives in Suriname who are

responsible for the financial and strategic decisions. In Chapter 4, we analyzed the risk attitudes of board members of seven (of the ten) companies listed on the SSE. The sample of respondents is small, but this is of course due to the fact that the size of the population is small. As far as we know, this is the first ever study on such risk attitudes for a country with a developing economy. Our hypotheses were all constructed from the literature on risk attitudes where the data were always collected for western industrialized countries. Most likely due to the small sample size we could not find much evidence for various hypotheses, but still various hypotheses did receive support.

To summarize, we find that there is some evidence that younger executives are more willing to take more risk and that executives with output backgrounds are more likely to engage in R&D investments. Also, we document that finance executives are more likely to engage in acquisition activities. Furthermore, for IT projects we find that executives for who the professional role and functional background experience match are less risk averse and associate with more investment decisions than executives without this match. Finally, when executives indicate that they are willing to take risk, given their position in the firm, the percentage that the firm invests in R&D is also larger.

Naturally, the main limitation of this study is the sample size, but we believe that some interesting conclusions could be drawn. The main one seems to be that the differences between risk attitudes of board members of companies in a developing economy do not differ tremendously from those of board members in developed economies. In addition, compared to countries with developed economies, developing financial markets such as that of Suriname suffer from limited disclosure of information.

Much more future work can be done in this area. Some countries with developed economies are much larger than Suriname, and perhaps data collected for those countries can reveal more insights into the risk attitudes of board member of firms.

In Chapter 5, we studied the relation between risk attitudes of thirteen board members of the seven companies examined in chapter 4 and company performance. Even though the sample of respondents is small, this is the first ever study on such

risk attitudes of board members for an emerging economy. Most likely due to the small sample size we could not find much evidence for various hypotheses, but still we find some significant evidence, and then usually in contrast to the postulated hypotheses.

To summarize, we find for the emerging economy of Suriname substantial evidence that when board members think about their risk attitude in their professional role that over-(confident) executives are more likely to work for growth companies with high BE/ME ratios, which is significant evidence in contrast to the posited hypothesis that overconfident executives are more likely to work in growth companies with low BE/ME ratios. With regard to the hypothesis that overconfident executives in value companies with high BE/ME ratios are more likely to pursue more new investments, we only find contrasting evidence for mergers and acquisitions. We also find the same support if we turn to the executives' professional role. When we turn to the individuals we find significant support against the usually maintained hypothesis for the extension of product capacity and IT projects. Finally, we find that younger executives are more likely to work for value companies with high BE/ME ratios, and that older board members who are also risk taking in their professional role work for value companies with high BE/ME ratios.

Most interestingly, we find for this emerging economy of Suriname, that more risk adversity by board members apparently leads to better firm performance.

6.2 Limitations

Empirical information with regard to this subject in Suriname is scarce due to the unavailability of information. In our studies we managed to collect unique data through various possibilities of data collection. Data on the SSE had to be collected by hand, and it took much effort to collect the relevant annual reports of various firms. Also, the sample size is small, as the population is small. Until now, there are eleven companies listed on the SSE of which for ten of these we could obtain consecutive time series data since 2003. In addition, we succeeded in interviewing thirteen board members of these companies. Consequently, it is difficult to

generalize. Our studies can form a basis for future research executed in other developing economies which in turn can contribute to the development of general theories.

In fact, at various occasions in our studies we found significant results but with outcomes in contrast to the commonly reported findings in the literature. Most of the literature deals with developed economies in western countries. It may well that situations in developing economies are very different, perhaps due to differing investment perceptions or differing attitudes towards entrepreneurship, and that new theories have to be developed for emerging economies.

6.3 Policy recommendations

The SSE reveals some of the classical limitations of small emerging markets (illiquidity, thin trading, and inefficiency), signaling a rather underdeveloped stock market. For example, the returns data sometimes show some odd changes.

Suriname as an emerging economy shares common features with other emerging markets. In particular, with respect to their history and the development of their financial sector where security markets are relatively of less importance. In order to understand the behavior and the development of emerging economies, we provide a brief discussion of countries with a comparable start as Suriname. Suriname (independent in 1975) and Guyana (independent in 1966), two neighboring countries on the northeast coast of South America, have both experienced economic decline after their independence. Cameroon in Africa, became independent in 1960 and was confronted with a severe decline in economic performance in the early 1980s. So, it may take a while after independence for a new economy to become mature. In addition, Suriname and Guyana both have an ethnically heterogeneous population, having similar ethnic characteristics except for the presence in Suriname of sizable minorities of Indonesians and Maroons (Singh, 2008). Cameroon also consists of a great diversity of people and ethnic groups. According to Easterly and Levine (1997), ethnic diversity is correlated with slow economic growth.

With regard to the economic development of these countries over the past years, Suriname's GDP per capita has grown from US$ 2,610 in 2003 to US$ 8,864 (updated: US$ 9,378) in 2012. Guyana's GDP per capita has grown from US$ 984 in 2003 to US$ 3,548 in 2012 while Cameroon's GDP per capita has grown from US$ 790 in 2003 to US$ 1,219 in 2012 (World Bank, 2015).

Suriname has established a stock exchange in 1994, the Suriname Stock Exchange (SSE) and Guyana has established one in 2003, the Guyana Stock Exchange (GSE). Cameroon has no stock exchange as of yet. Until now the SSE has not effectively contributed to economic development in Suriname. The impact of the GSE on Guyana's economy is unknown. The number of companies listed on the GSE increased from twelve (June 2003) to fifteen (December, 2011). http://www.gasci.com/results/current.htm. According to Gooptu (1994), a small number of participants signals inefficient market making. These countries' financial systems are largely dominated by the banking sector.

Moreover, Suriname, Guyana and Cameroon have in common a relatively poor business climate. According to the Doing Business Index of the World Bank (2015), Suriname ranks on the 162nd place, Guyana on the 123rd and Cameroon on the 158th place out of the 189 places.

In summary, emerging economies have certain aspects in common which may hamper financial development and economic growth.

We now provide some policy recommendations for policy makers and regulators in Suriname. One of the pillars of a country's welfare is a well-developed financial sector. The primary role of financial institutions and capital markets is to allocate capital efficiently to the most profitable investments. In the case of Suriname it is important that more financing possibilities are created for start-up companies and for the continuing operations of existing companies. As stated by the Suriname Trade and Industry Association (STIA), "the private sector is the driver of economic growth". With this, it is important to consider the Suriname Stock Exchange as another source of capital to finance companies' investments. In order to stimulate the development of the SSE, regulators could try to attain weak form efficiency of the SSE by taking steps to increase the number of market participants

by encouraging the listing of companies. As stated by Bodeutsch and Franses (2014), the Surinamese government should facilitate better stock market performance through for example improved disclosure requirements and settlement procedures.

Suriname has issued the capital market law (Wet Kapitaalmarkt) in 2014. It states that internationally capital markets need to comply with the principles released by the International Organization of Securities Commissions (IOSCO). The principles include investor protection, ensuring fair, efficient, transparent and regulated markets. These conditions form the basis for the development of a well-functioning capital market. In the future, enforcement of the law needs to be considered.

In addition, according to Yartey (2008), the establishment of good quality institutions can influence the attractiveness of equity investment and lead to stock market development. Well-developed institutions minimize political risk, an important factor in investment decisions.

Suriname consistently received a low ranking on the ease of doing business index over the past years which means that the regulatory environment does not contribute sufficiently to set up and operate a local company (World Bank, 2015). The outdated legislation in Suriname is not conducive to investments (Ministry of Labor, Technological Development and Environment, 2013).

For policy makers and regulators is it essential to create a business environment where entrepreneurship is stimulated. Some efforts have also been made. For instance, in September 2011, Suriname signed on to become the 183rd member of the International Financing Corporation (IFC) of the World Bank. Through this membership the government hopes to obtain access to cheaper, long term financing for the private sector and support in identifying and developing new investment possibilities (Bureau of Economic and Business Affairs, 2013).

In sum, a properly functioning stock market may contribute in improving the business climate and ultimately enhance economic growth.

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Nederlandstalige samenvatting

Aandelenmarkten in opkomende economieën worden vaak gezien als een bron van financiële ontwikkeling en uiteindelijk ook als een bron van economische groei. Goed functionerende of efficiënte aandelenmarkten kunnen bijdragen aan de ontwikkeling van de financiële sector van een land door een toename van besparingen, efficiënte allocatie van kapitaal naar de meest rendabele investeringen en beter gebruik van bestaande financiële middelen. De efficiëntie van aandelenmarkten is vooral belangrijk voor landen met opkomende economieën gezien deze landen ernaar streven om de wereldwijde economische groei bij te houden. Om te kunnen profiteren van financiering door de uitgifte van aandelen is het voor landen met opkomende economieën van belang dat hun aandelenmarkten ten minste het laagste niveau van marktefficiëntie bezitten namelijk de zwakke vorm van efficiëntie. Dit betekent dat alle informatie over historische prijzen en handelsvolumes in de huidige marktprijs van het aandeel is verwerkt.

Opkomende economieën delen gemeenschappelijke kenmerken in het bijzonder met betrekking tot hun financiële sector, waar het bankwezen domineert, terwijl de aandelenmarkten relatief minder belangrijk zijn voor het aantrekken van financiering (indirecte versus directe financiering). Echter, door het verstrekken van alternatieve middelen voor de financiering van investeringen, kunnen aandelenmarkten de effecten van de dominerende rol van banken reduceren. In Suriname is het bankwezen van oudsher ook de belangrijkste speler in de financiële sector. De aandelenmarkt in Suriname kan in deze optreden als een alternatieve bron van financiering.

Gezien de rol die de aandelenmarkt in Suriname kan spelen, onderzoeken wij in dit proefschrift de Surinaamse effectenbeurs als onderdeel van de financiële markt van Suriname. Suriname heeft sinds 1994 een aandelenmarkt, de Surinaamse effectenbeurs. Wij bestuderen de empirische eigenschappen inclusief de zwakke vorm van efficiëntie van de aandelenrendementen van tien bedrijven die genoteerd zijn op de effectenbeurs. Wij onderzoeken ook de prestatie van de aandelen van deze tien bedrijven op de beurs en de relatie tussen de prestatie van deze bedrijven en bepaalde factoren. We zijn erin geslaagd om unieke gegevens te verzamelen door middel van verschillende dataverzamelingsmogelijkheden.

Een interessant aspect van economische groei is dat veel ervan plaatsvindt door de groei van de bestaande bedrijven in een land. Dit verhoogt de interesse om ook de bestuurders van de bedrijven die op de Surinaamse effectenbeurs zijn genoteerd te bestuderen. Zij zijn verantwoordelijk voor de financiële en strategische beslissingen en als we willen begrijpen waarom bedrijven op een bepaalde manier presteren, is het van belang dat de kenmerken van hun meest invloedrijke actoren worden bestudeerd. Hierbij wordt in acht genomen het risicogedrag dat als belangrijk wordt beschouwd in de creatie van waarde voor aandeelhouders en toekomstige investeerders. De meeste, zo niet alle huidig onderzoek richt zich op het risicogedrag van bestuurders in westerse bedrijven. Wij onderzoeken het risicogedrag van vooraanstaande bestuurders in een opkomende economie. Vervolgens kijken we naar de relatie tussen het risicogedrag van deze bestuurders en de prestaties van de bedrijven.